

# **NATIONAL PETROLEUM COUNCIL**

**112<sup>th</sup> Meeting  
JW Marriott Hotel**

**Washington, D.C.**

**September 25, 2003  
2:30 P.M.**

**NPC**

# **BALANCING NATURAL GAS POLICY**

**Fueling the Demands of a Growing Economy**

**Committee on Natural Gas Presentation  
to the National Petroleum Council**

**September 25, 2003**

**NPC**



# **OVERVIEW**

**Jerry J. Langdon  
Reliant Resources, Inc.**

**NPC**

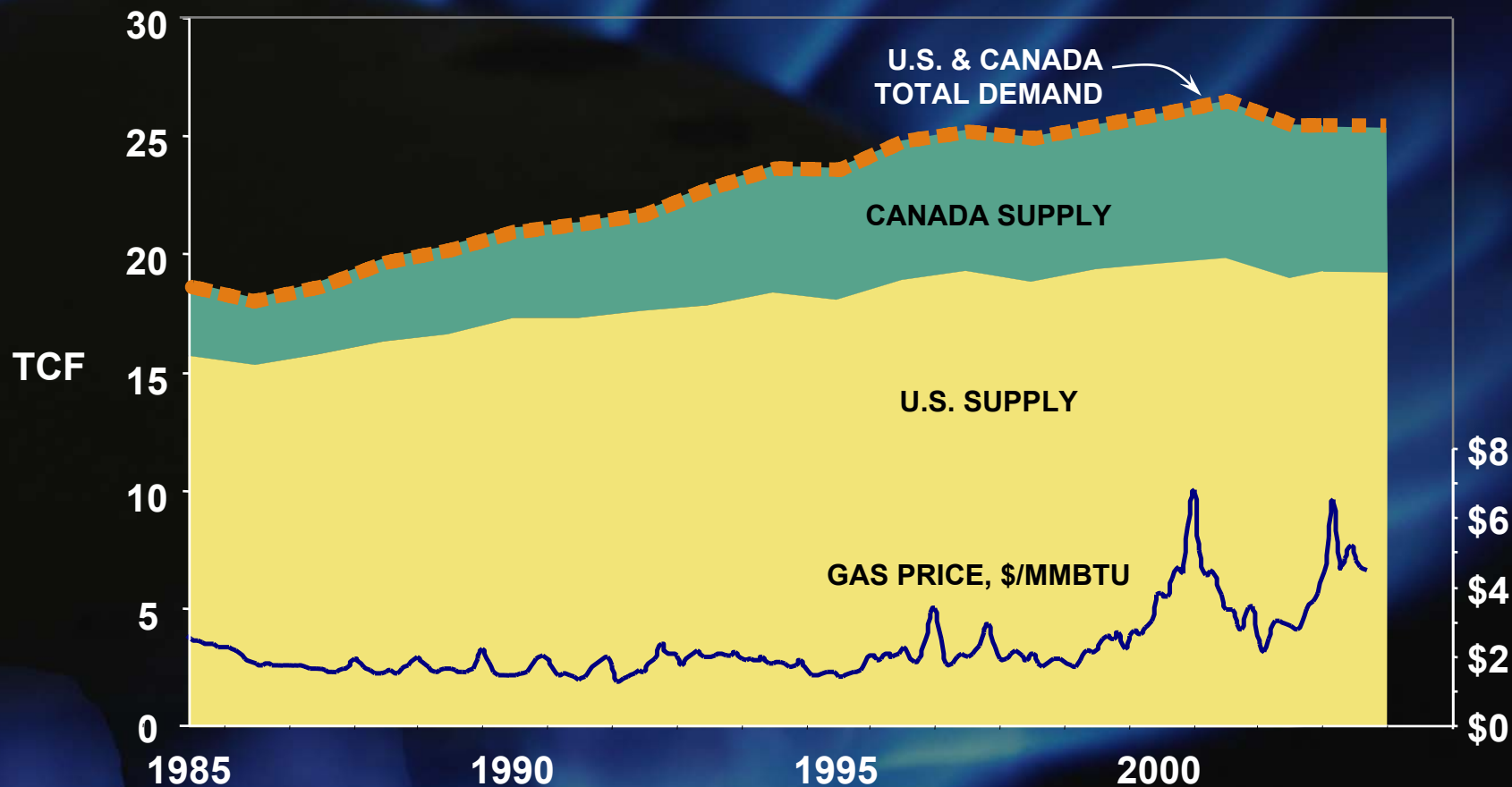
# The Study Could Not Be More Timely

*“Examine the potential implications of new supplies, new technologies, new perceptions of risk, and other evolving market conditions that may affect the potential for natural gas demand, supplies, and delivery through 2025 ... provide insights on energy market dynamics, including price volatility and future fuel choice, and an outlook on the longer-term sustainability of natural gas supplies ... advice on actions that can be taken by industry and Government to increase the productivity and efficiency of North American natural gas markets and to ensure adequate and reliable supplies of energy for consumers.”*

Spencer Abraham  
Secretary of Energy  
March 2002

NPC

# Higher Prices Reflect a Fundamental Shift in Supply & Demand





# **We Must Improve from the Status Quo**

**The current policy direction — unaltered — will likely lead to difficult conditions in the natural gas market, but industries, government, and consumers will react.**

**Therefore, this study assumes action beyond the status quo: Arctic pipelines built, substantial LNG imports, success in Lower-48 permitting, increased energy efficiency, fully-compliant coal and renewable generation.**

# **The NPC Considered Two Paths Beyond the Status Quo**

## **Reactive Path**

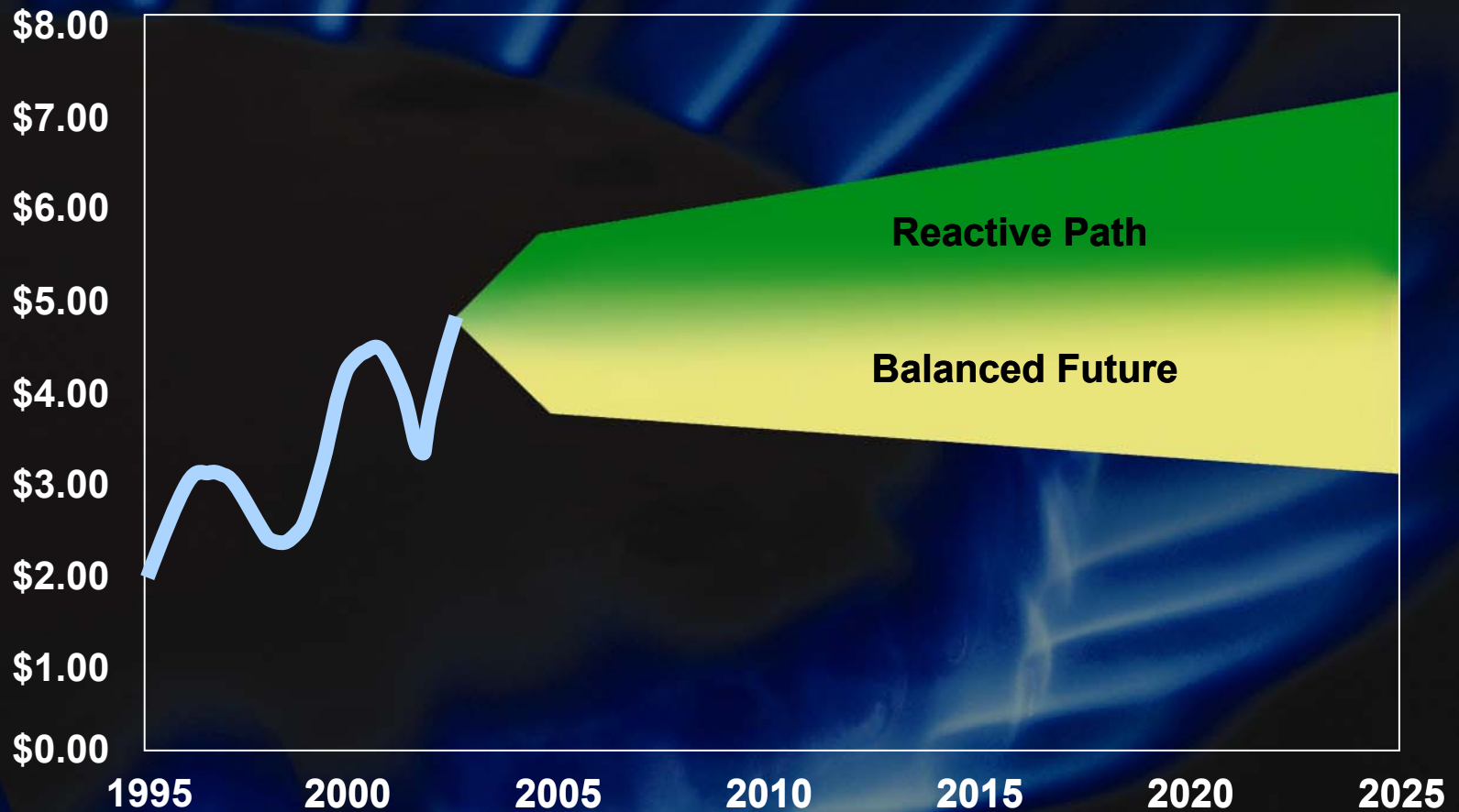
Public policies remain in conflict, encouraging consumption while inhibiting supply ... resulting in higher prices and volatility

## **Balanced Future**

Public policies aligned: alternate fuels and new natural gas supply sources compete to ensure lowest consumer cost

# Potential Price Range

Annual Average Henry Hub Prices, \$/MMBTU





# What Do We Need to Do?

**Improve demand  
flexibility & efficiency**

**Increase supply  
diversity**

**Sustain and enhance  
infrastructure**

**Promote efficient  
markets**



**Higher economic  
growth**

**Higher employment**

**Stronger industrial  
activity**



# **NATURAL GAS DEMAND**

**David J. Manning  
KeySpan**

**NPC**

# **The Demand Task Group Approach Involved All Consumer Sectors**

**Develop a sector-by-sector demand picture**

**Analyze existing and future electric power**

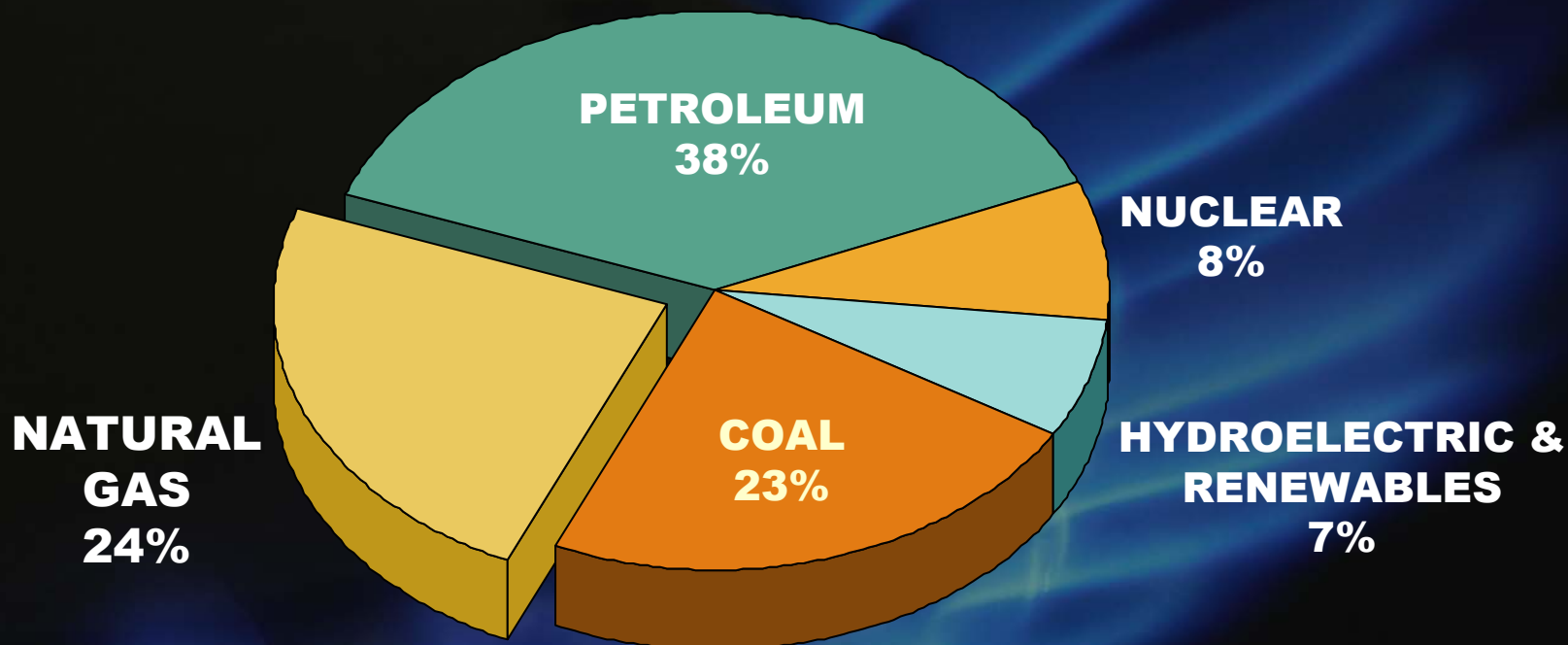
**Assess industrial process energy and raw materials**

**Evaluate the role of energy efficiency in all sectors**

**Integrate U.S. & Canadian demand;  
Mexico modeled as net export/import**

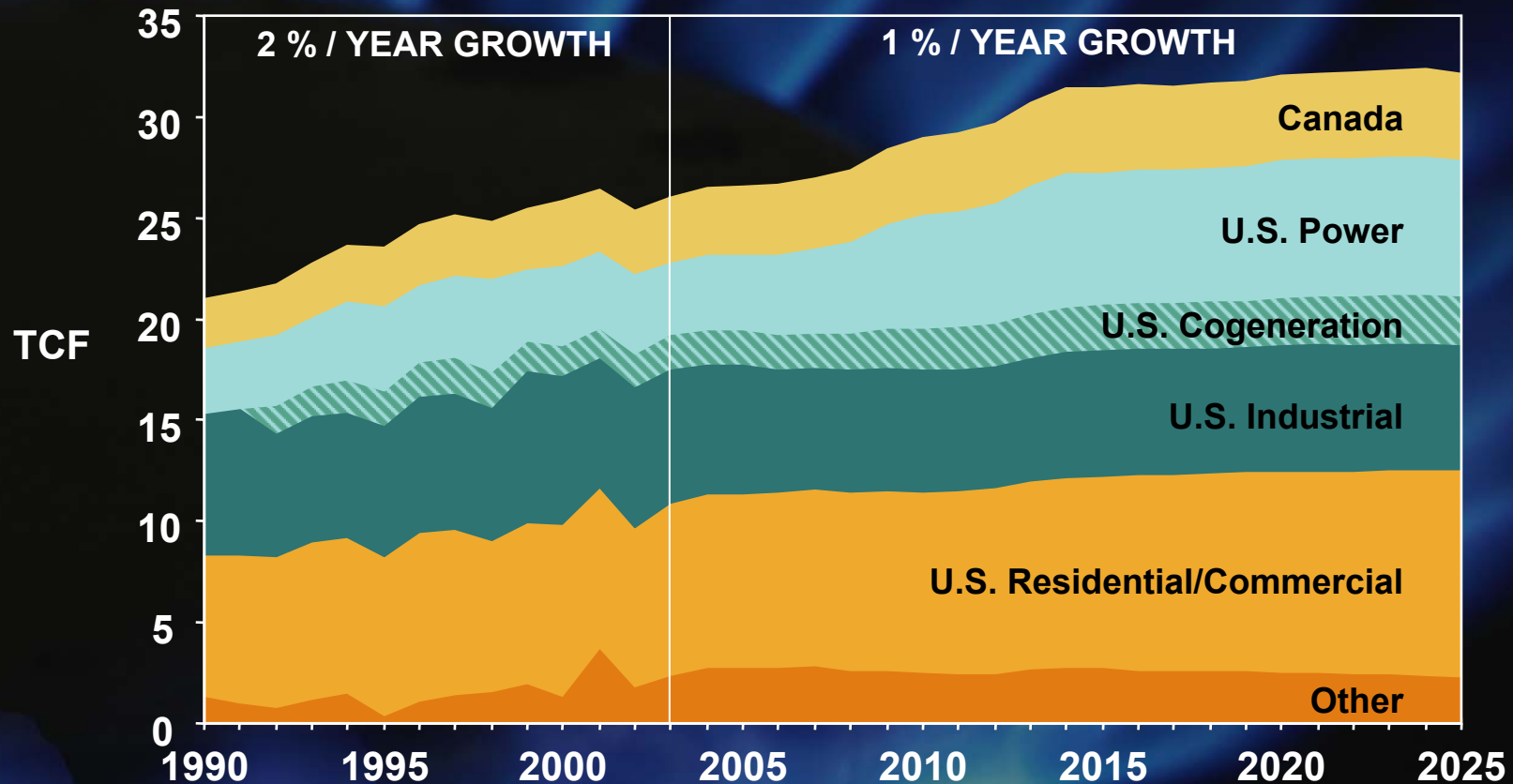
# Natural Gas is Important to Our Economy

Average Annual U.S. Energy Use  
97 TCF (equivalent)



NPC

# Demand is Diverse and Power Generation Will Drive Growth





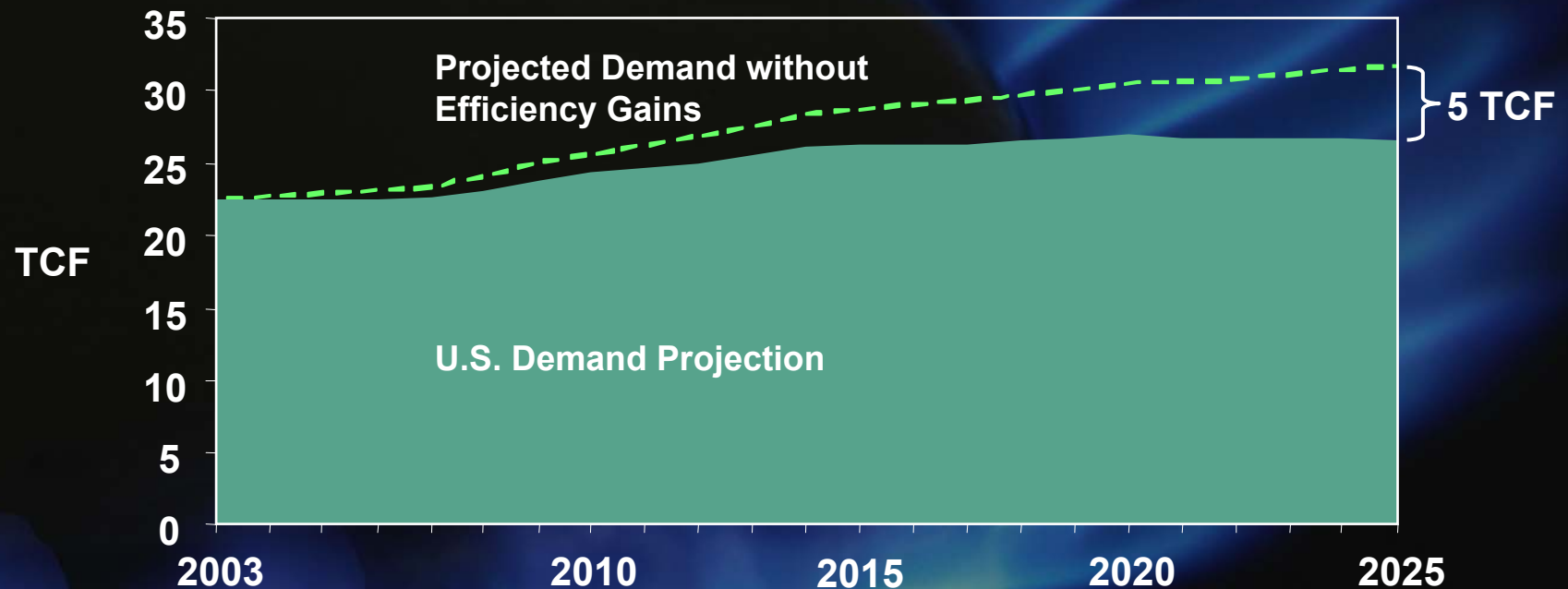



**Finding: Greater energy efficiency and conservation are vital near-term and long-term mechanisms for moderating price levels and reducing volatility.**

**NPC**

# Continued Energy Efficiency is Important

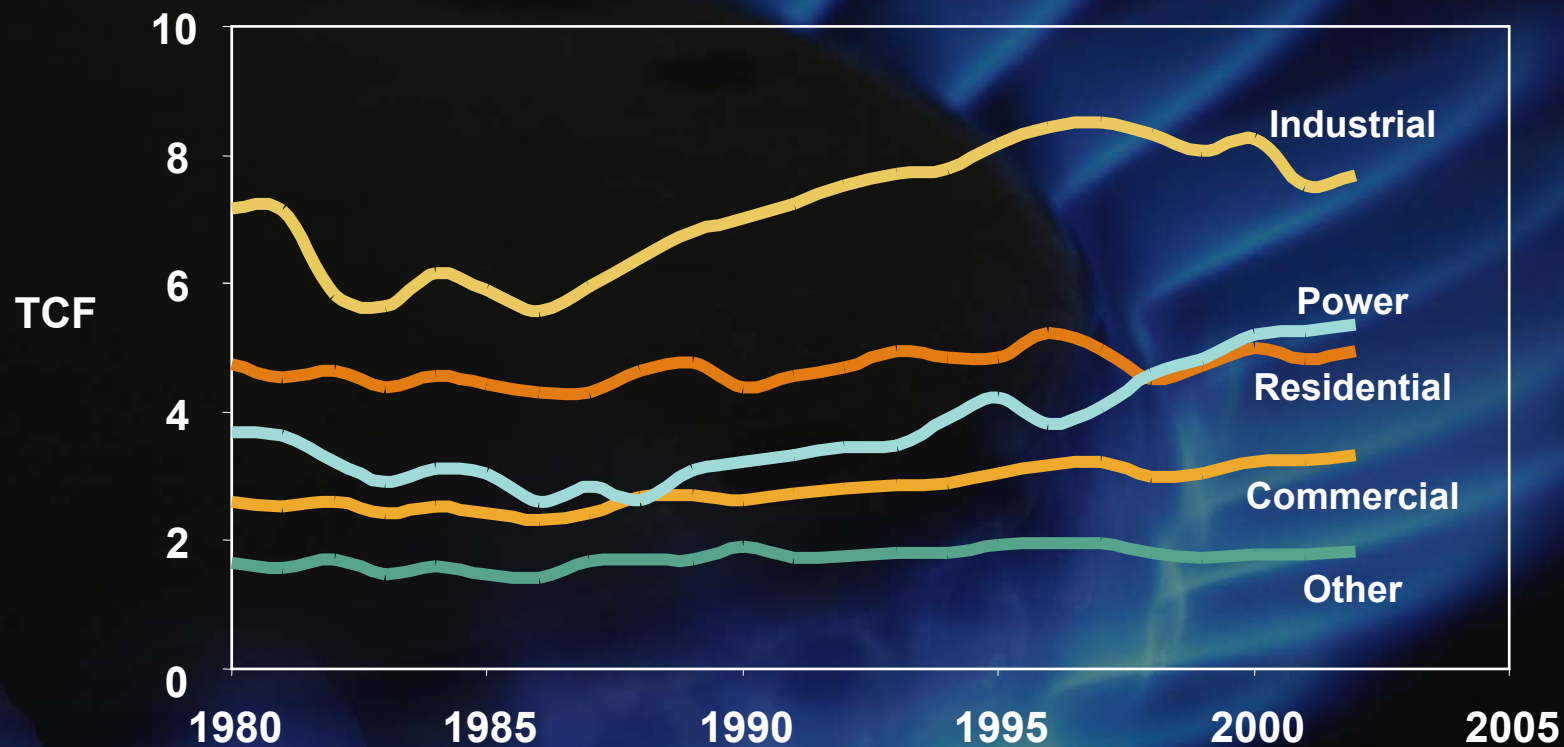
**Recommendation: Encourage increased efficiency and conservation through market-oriented initiatives and consumer education.**





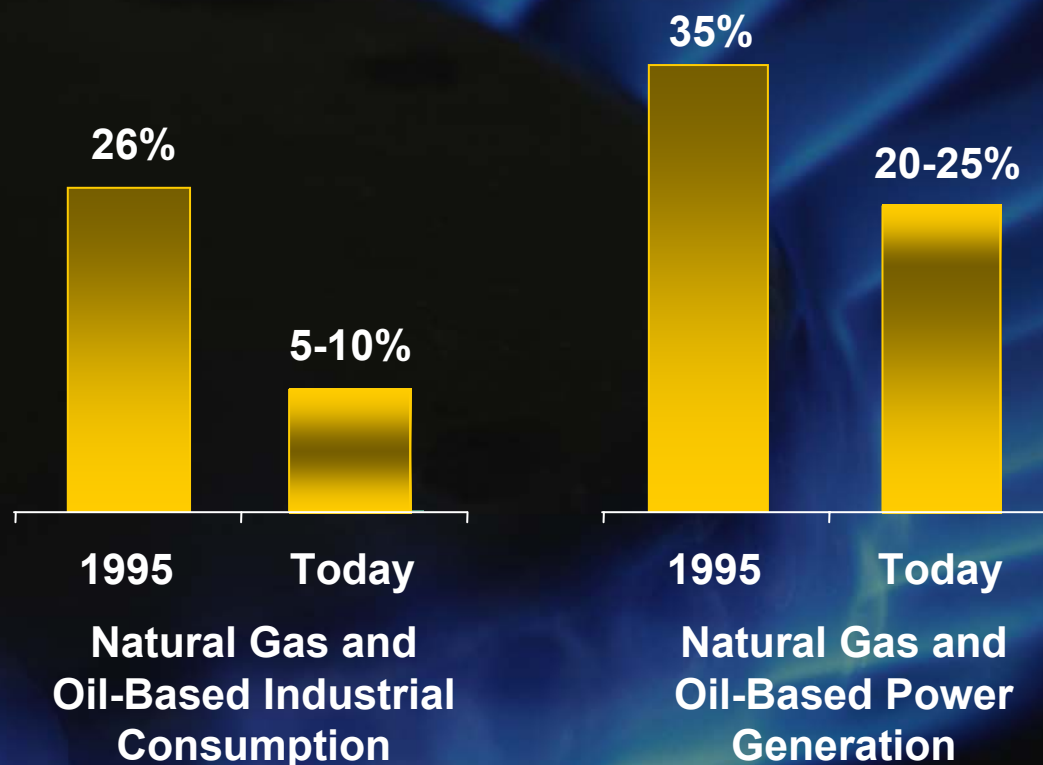
**Finding: Power generators and industrial consumers are more dependent on gas-fired equipment and less able to respond to higher gas prices by utilizing alternate sources of energy.**

# Key Demand Sectors are Consuming More Gas



# As Demand Has Grown, Flexibility Has Eroded

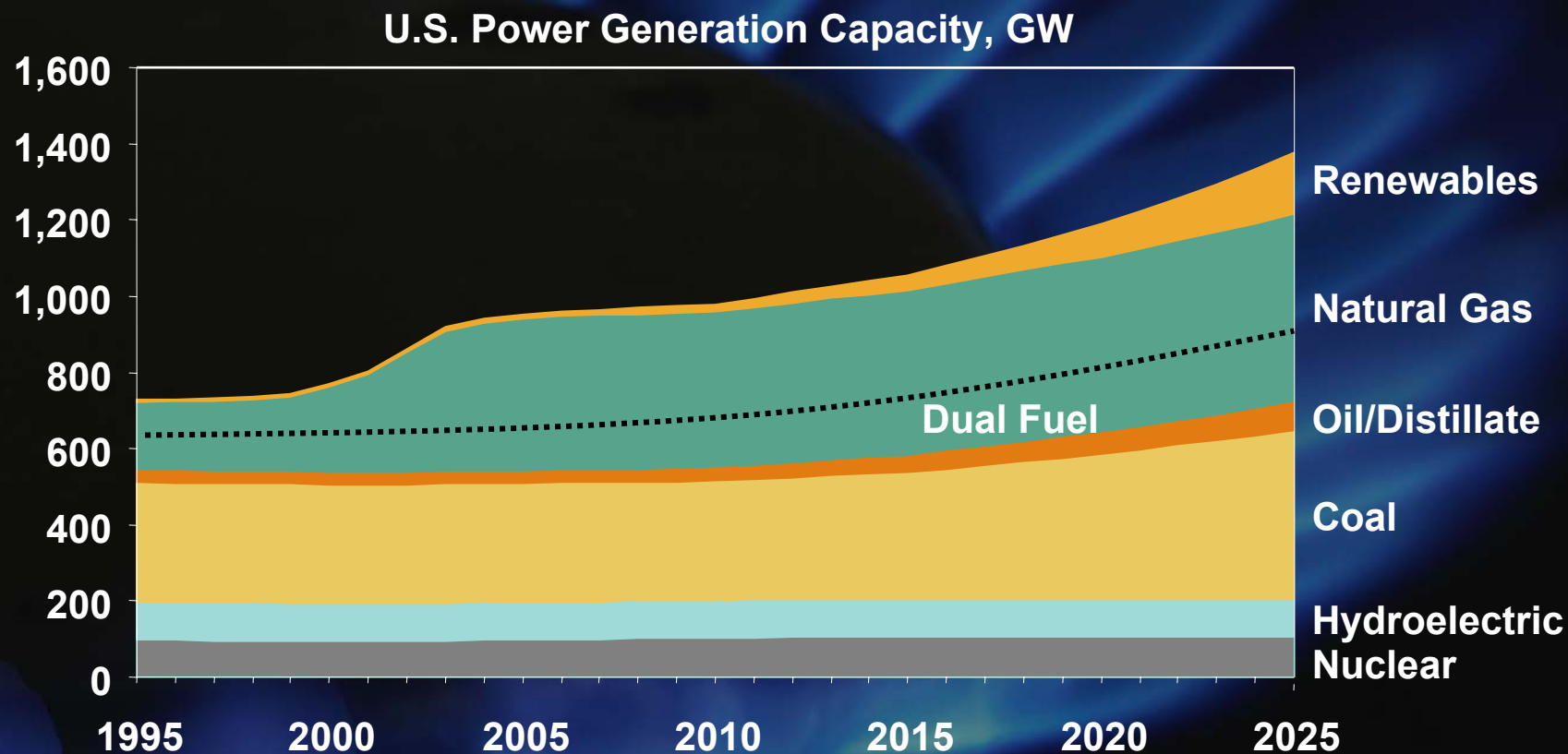
## Fuel Substitution Capability





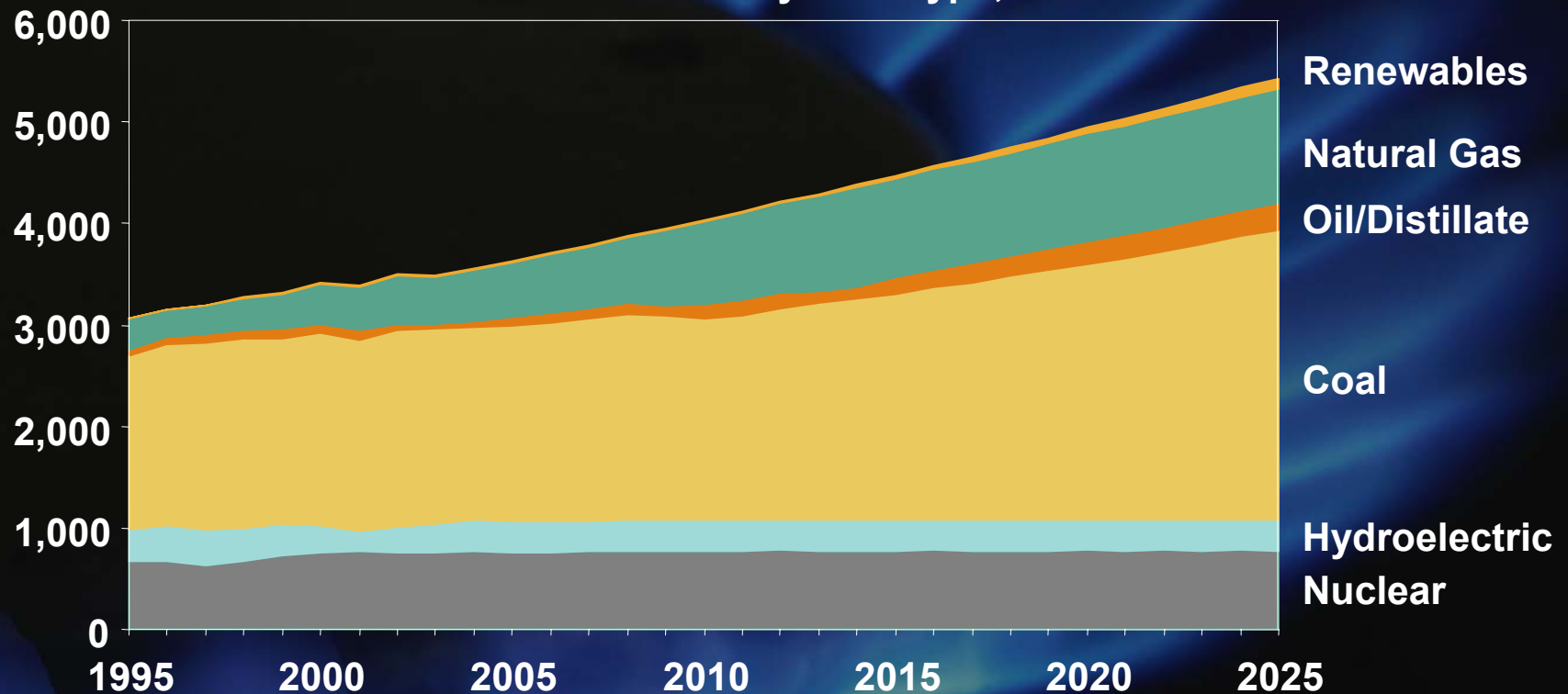
**Finding: Gas consumption will grow, but such growth will be moderated as the most price-sensitive industries become less competitive, causing some industries and associated jobs to relocate outside North America.**

# The Gas-Fired Generation Buildup Has Reshaped Demand

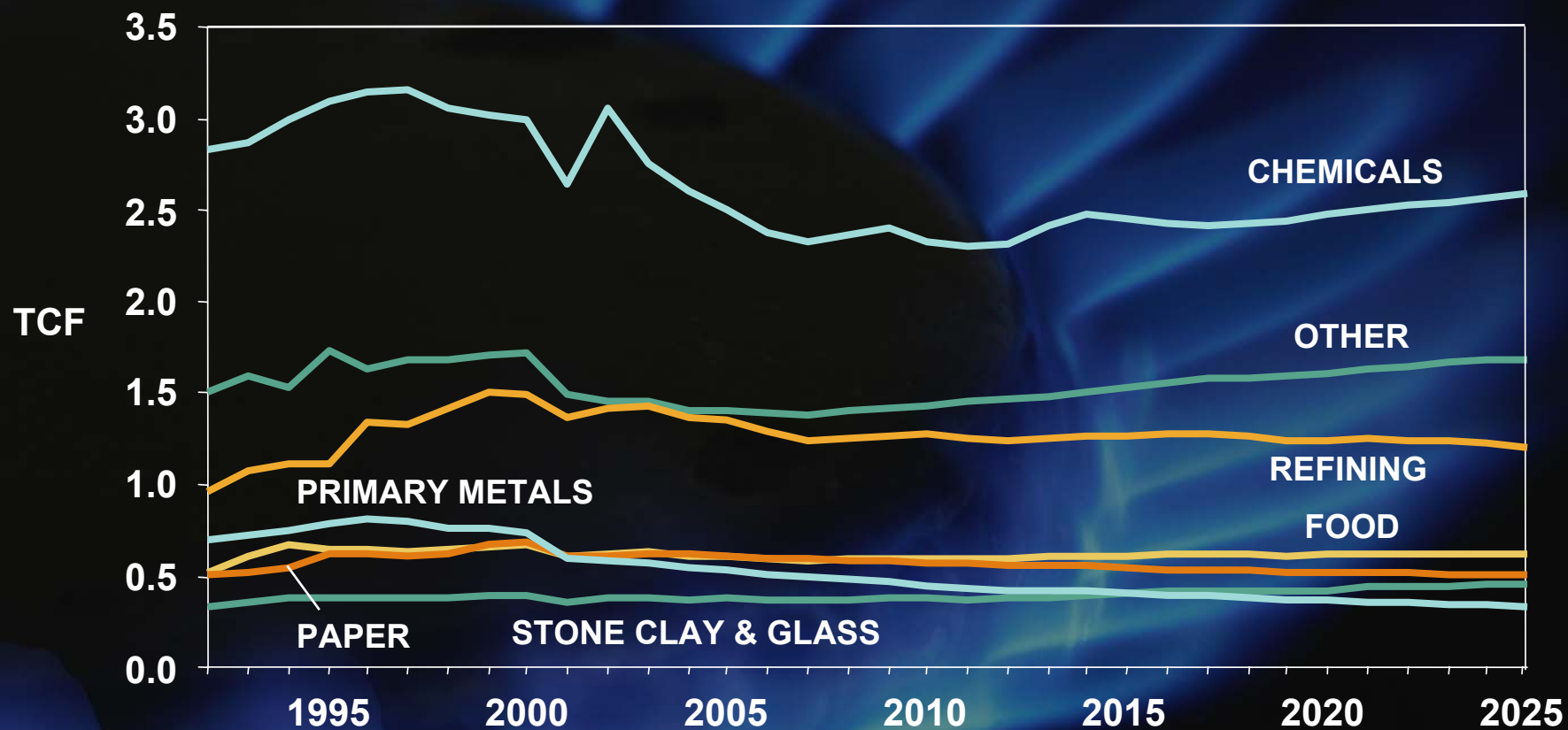


# Gas Use Will Grow, but Other Generation Sources Will Compete

U.S. Power Generated by Fuel Type, TWH

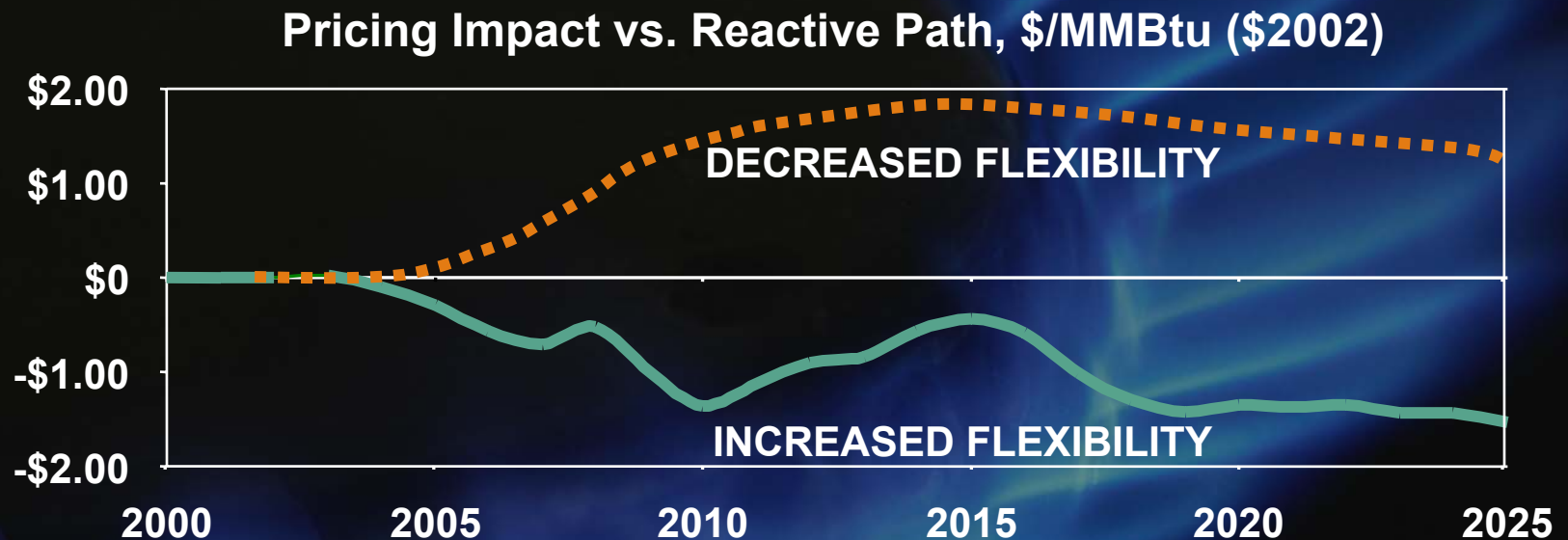


# Higher Prices Impact Industrial Growth



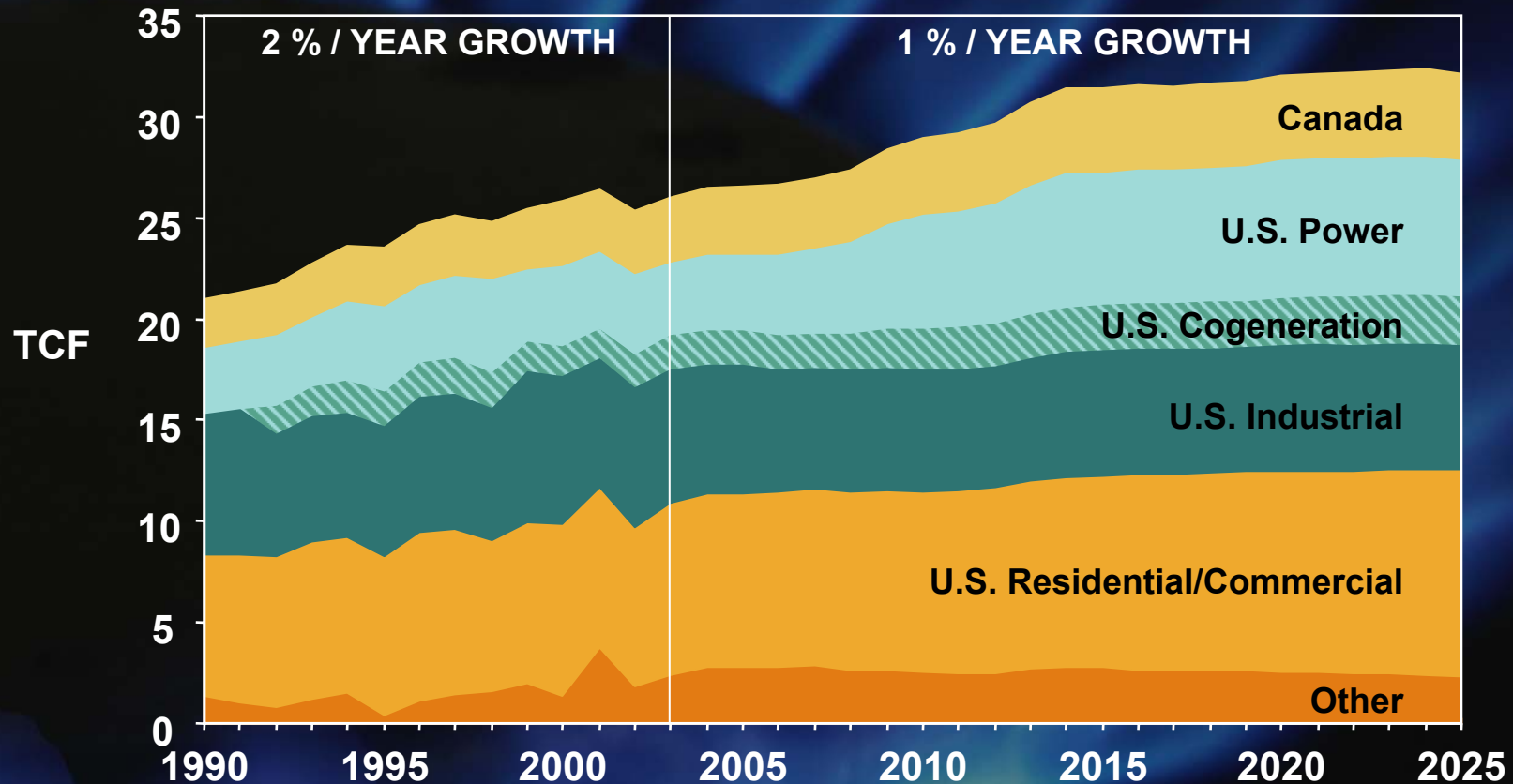
# A Balanced Fuel Portfolio is Essential

**Recommendation: Increase capability to utilize alternate fuels in power and industrial applications.**





# Overall Demand Growth Will Moderate, While the Power Sector Drives Growth





# **NATURAL GAS SUPPLY**

**Mark A. Sikkel  
ExxonMobil Production Company**

**NPC**

# **The Supply Task Group Approach Was Comprehensive**

**Conduct a review of the North American  
resource base**

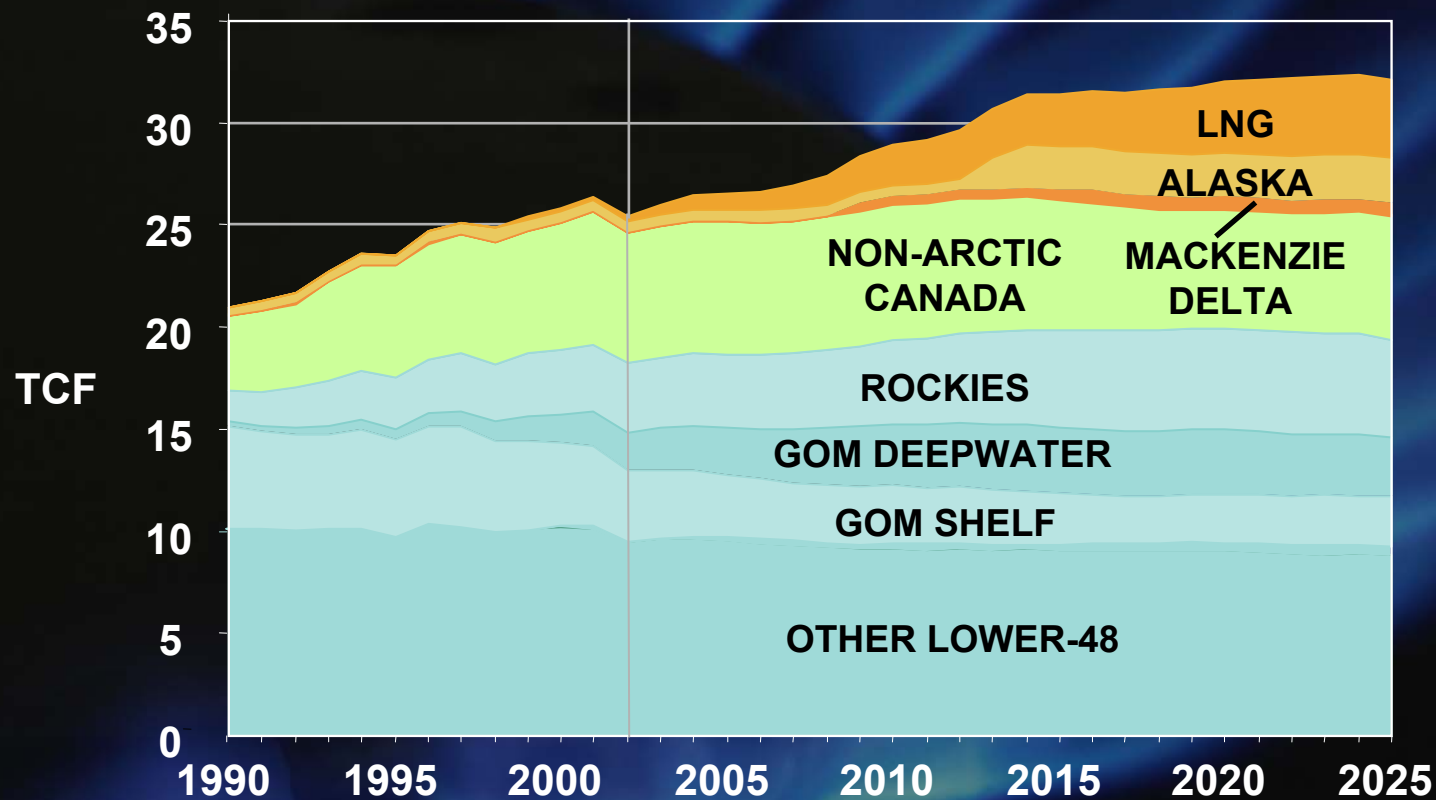
**Analyze historical production performance**

**Evaluate new supply sources (LNG, Arctic)**

**Consider effects of advancing technology  
and regulatory environment**

**Focus on production outlook**

# Future Supplies Come from Traditional and New Sources



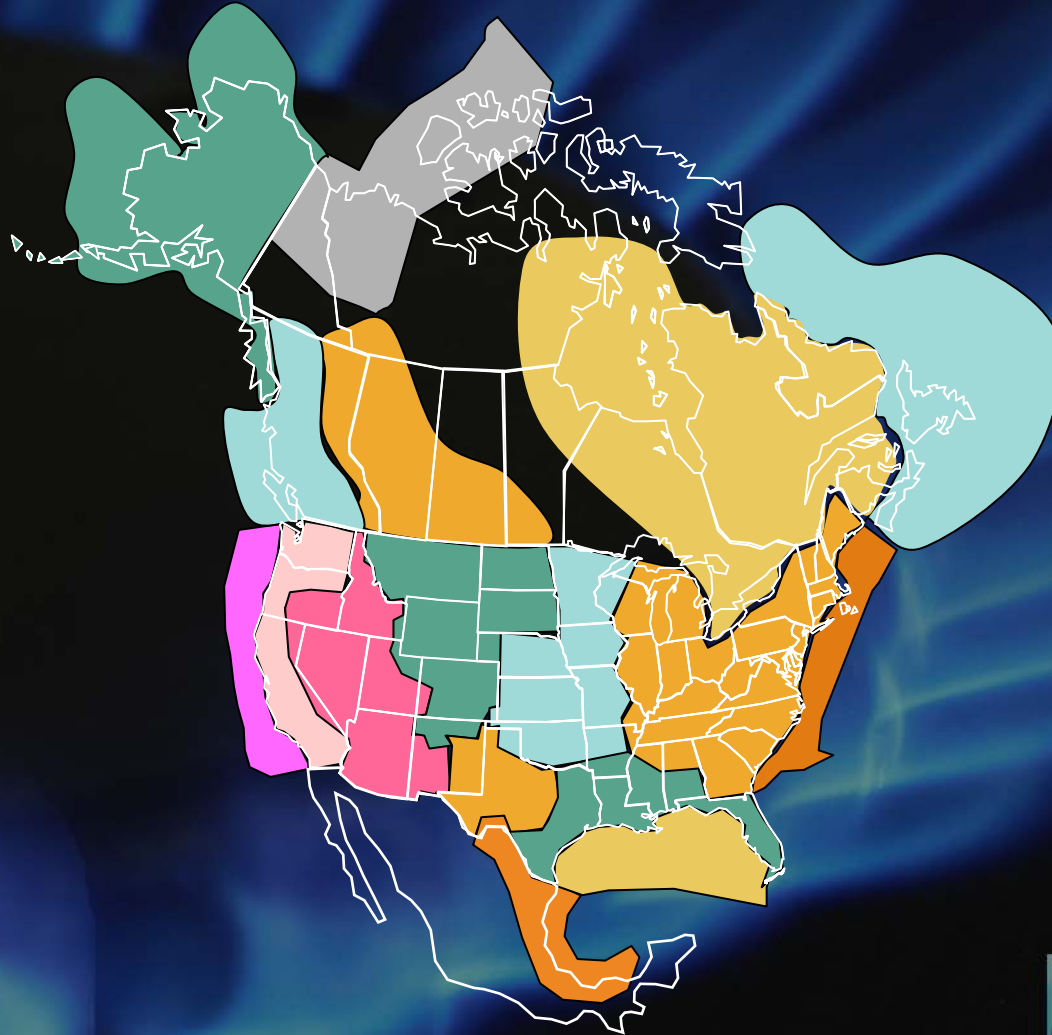


**Finding: Traditional North American producing areas will provide 75% of long-term U.S. gas needs, but will be unable to meet projected demand.**

**NPC**

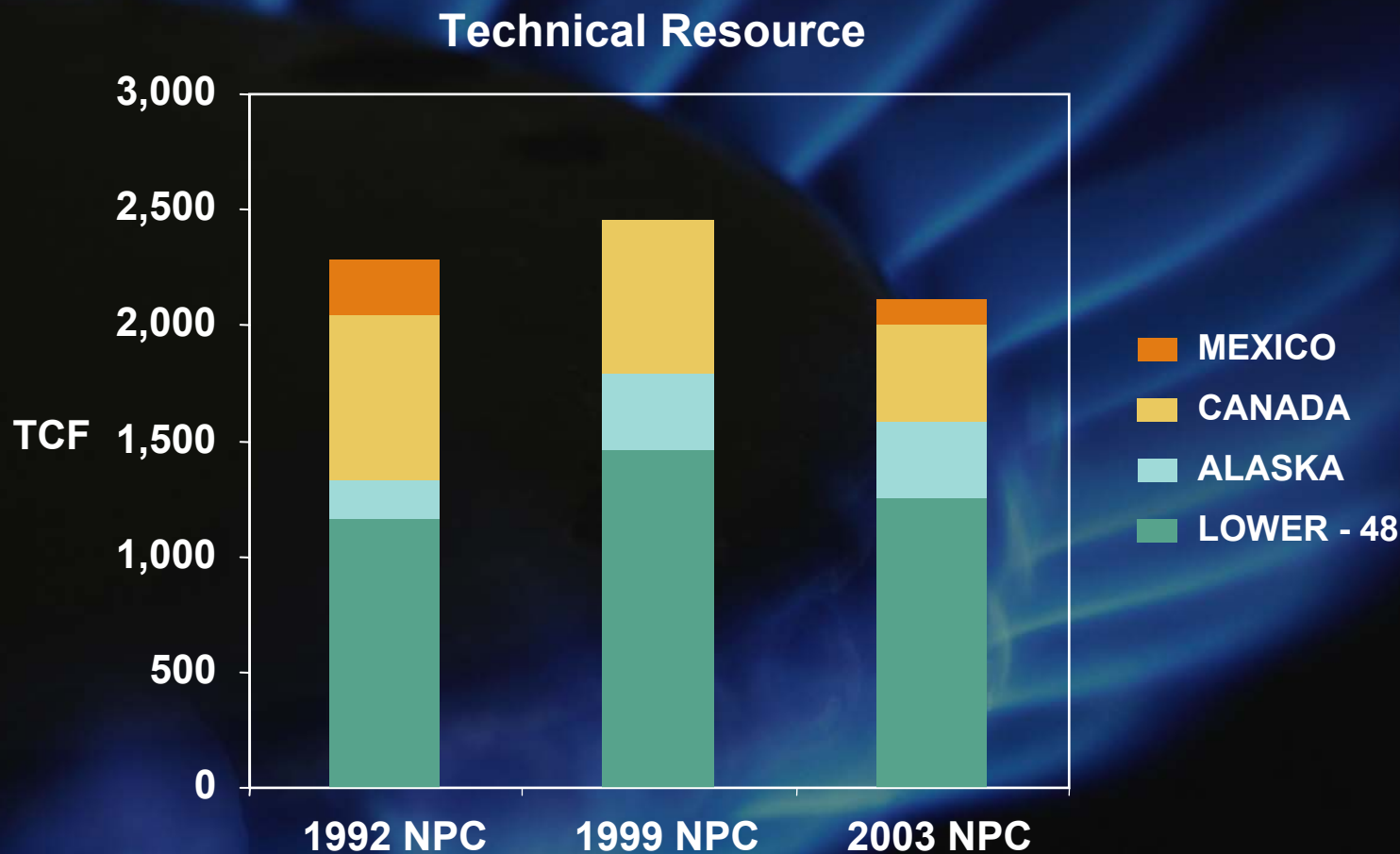


# North American Resource Base is Large and Diverse



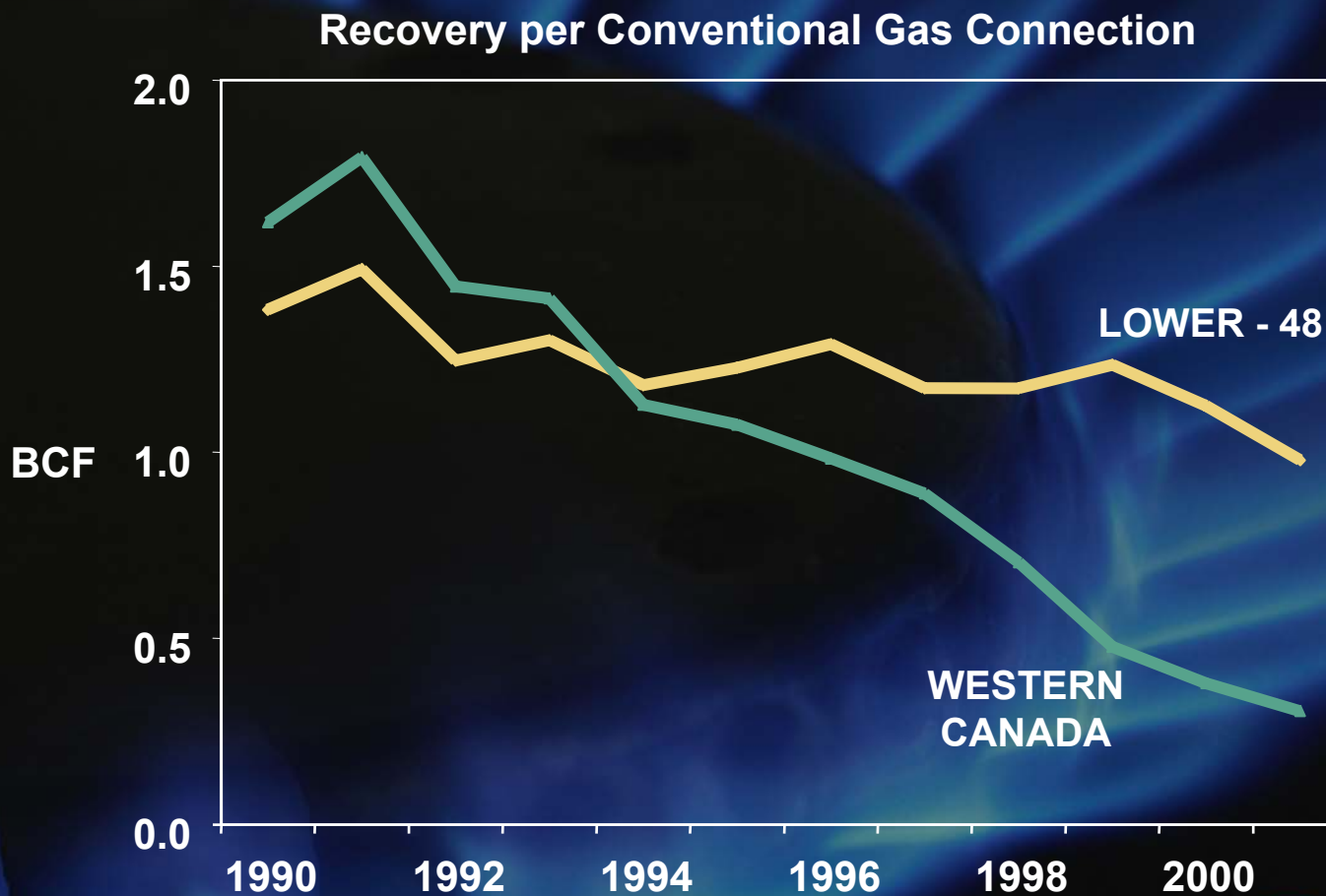
NPC

# North American Resource Base Was Comprehensively Reviewed



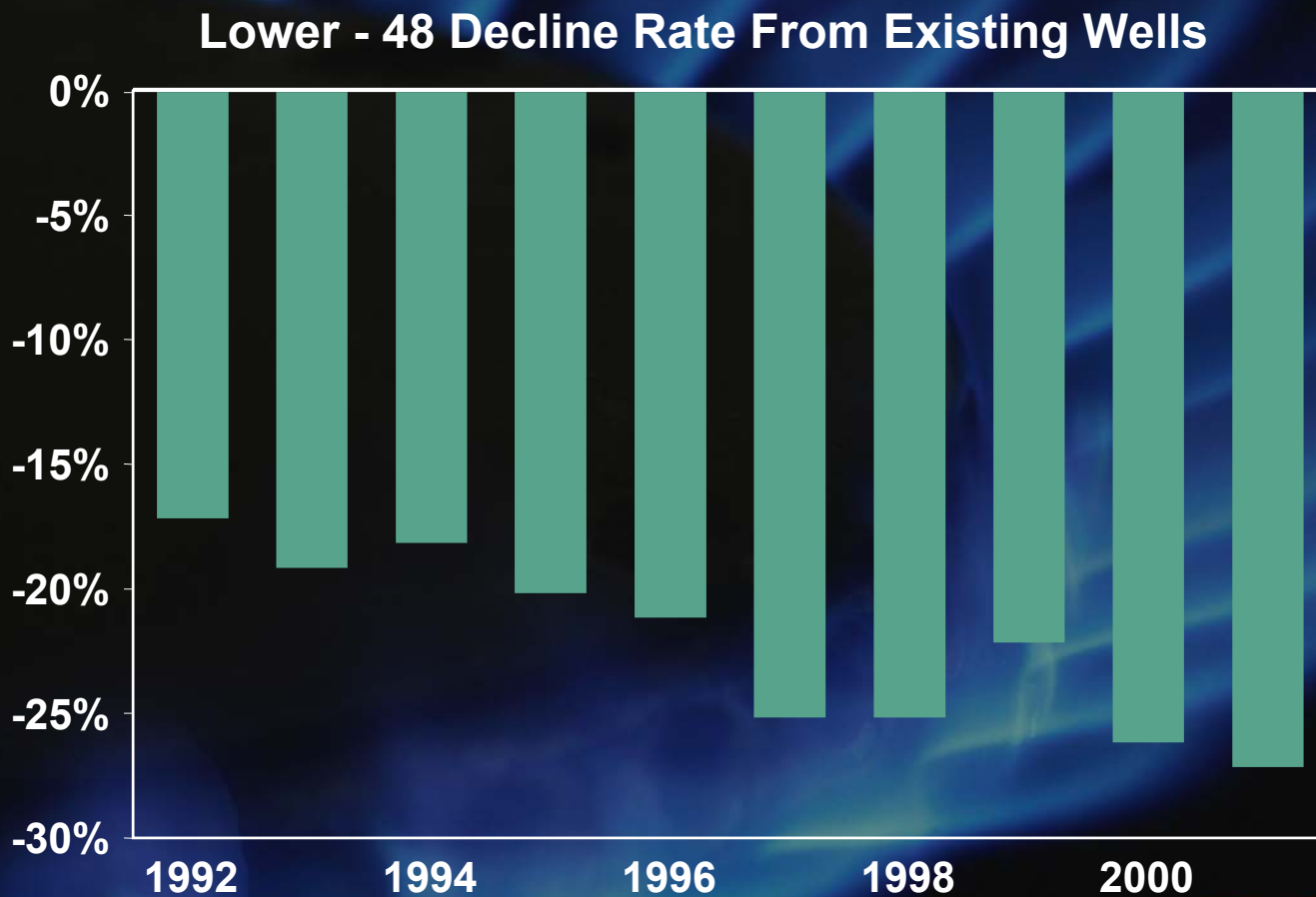
NPC

# Production History Confirms a Maturing Resource Base

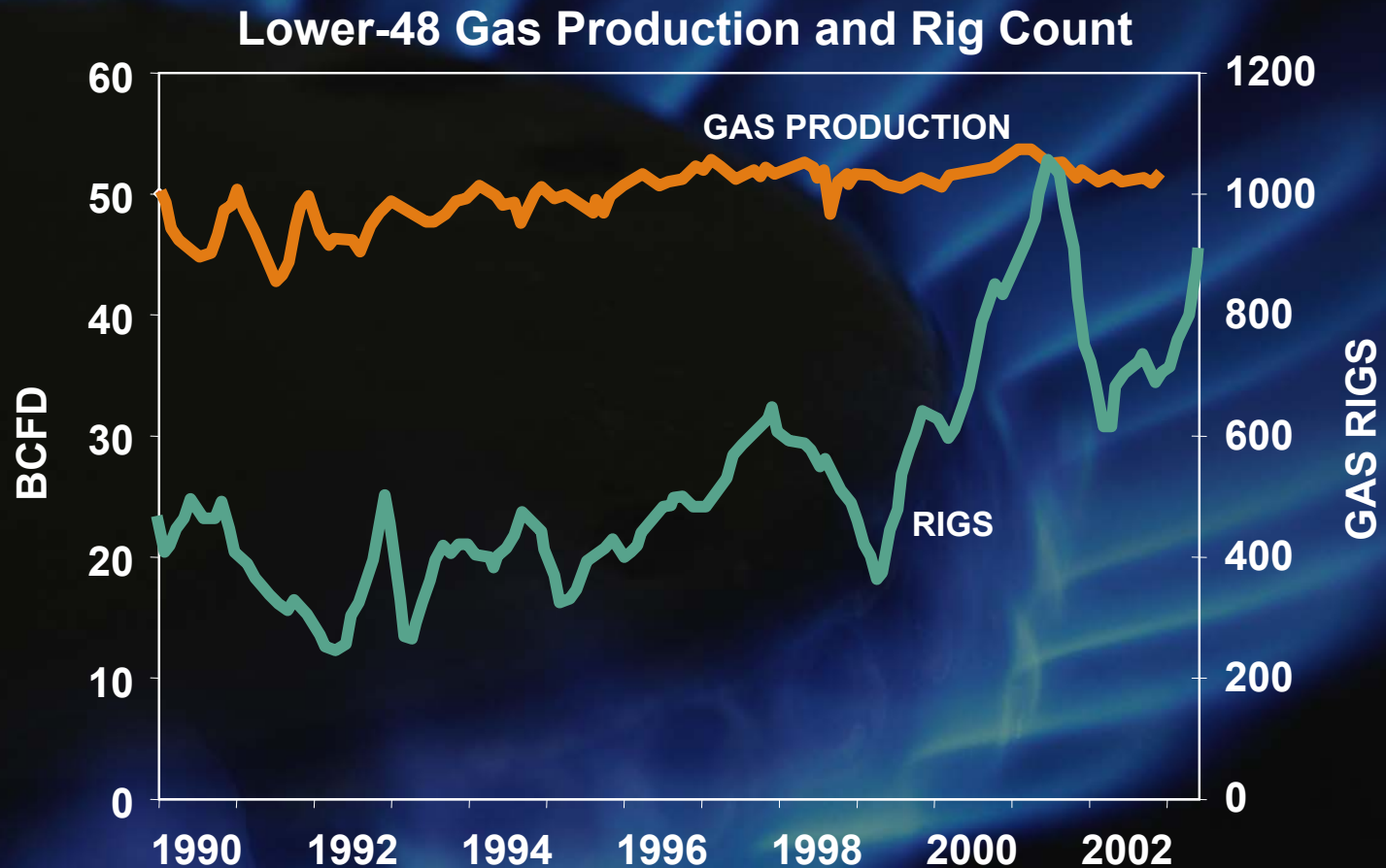


NPC

# The Rate of Production Decline is Increasing

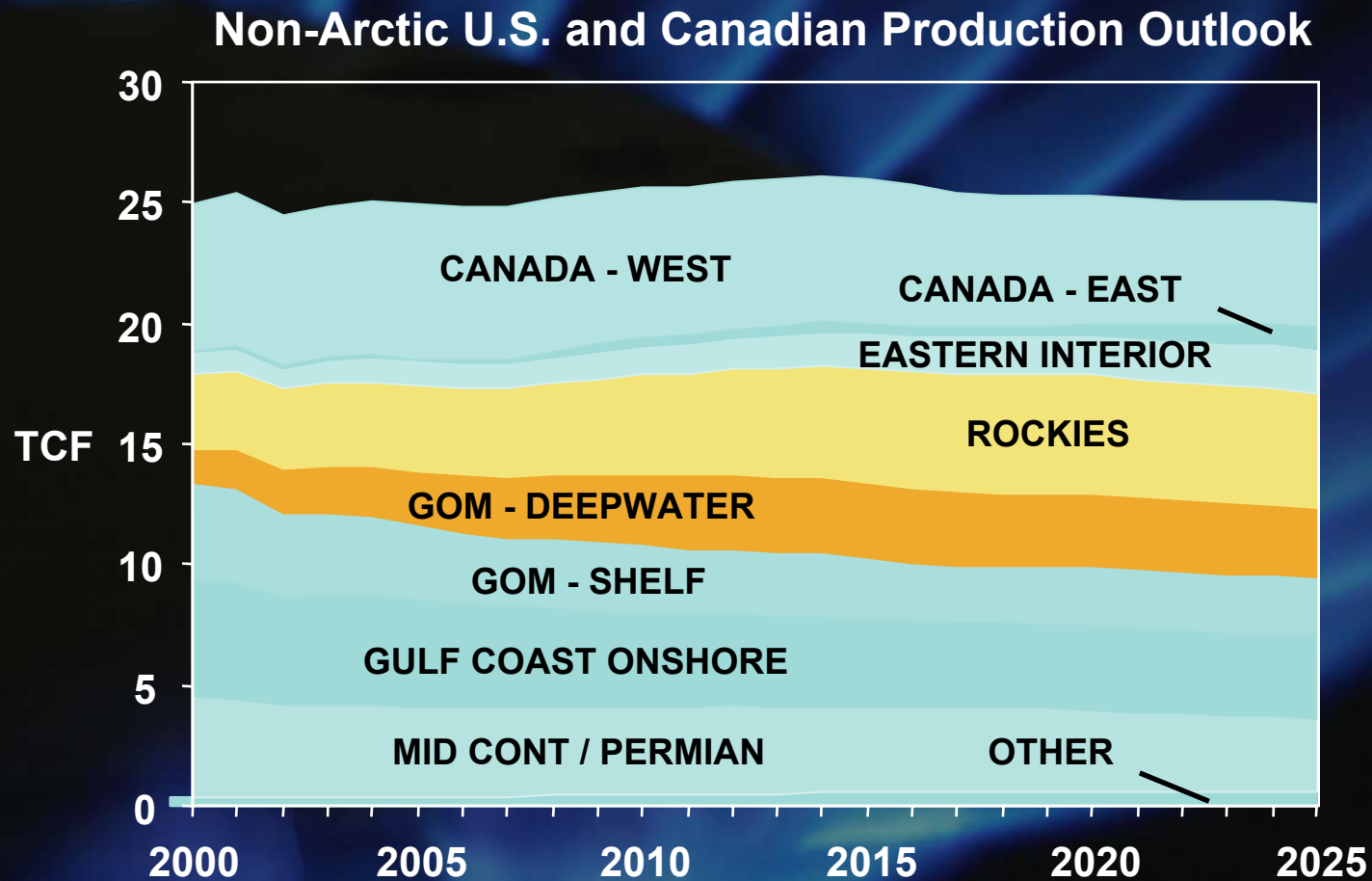


# Production Response from Increased Drilling Has Been Modest

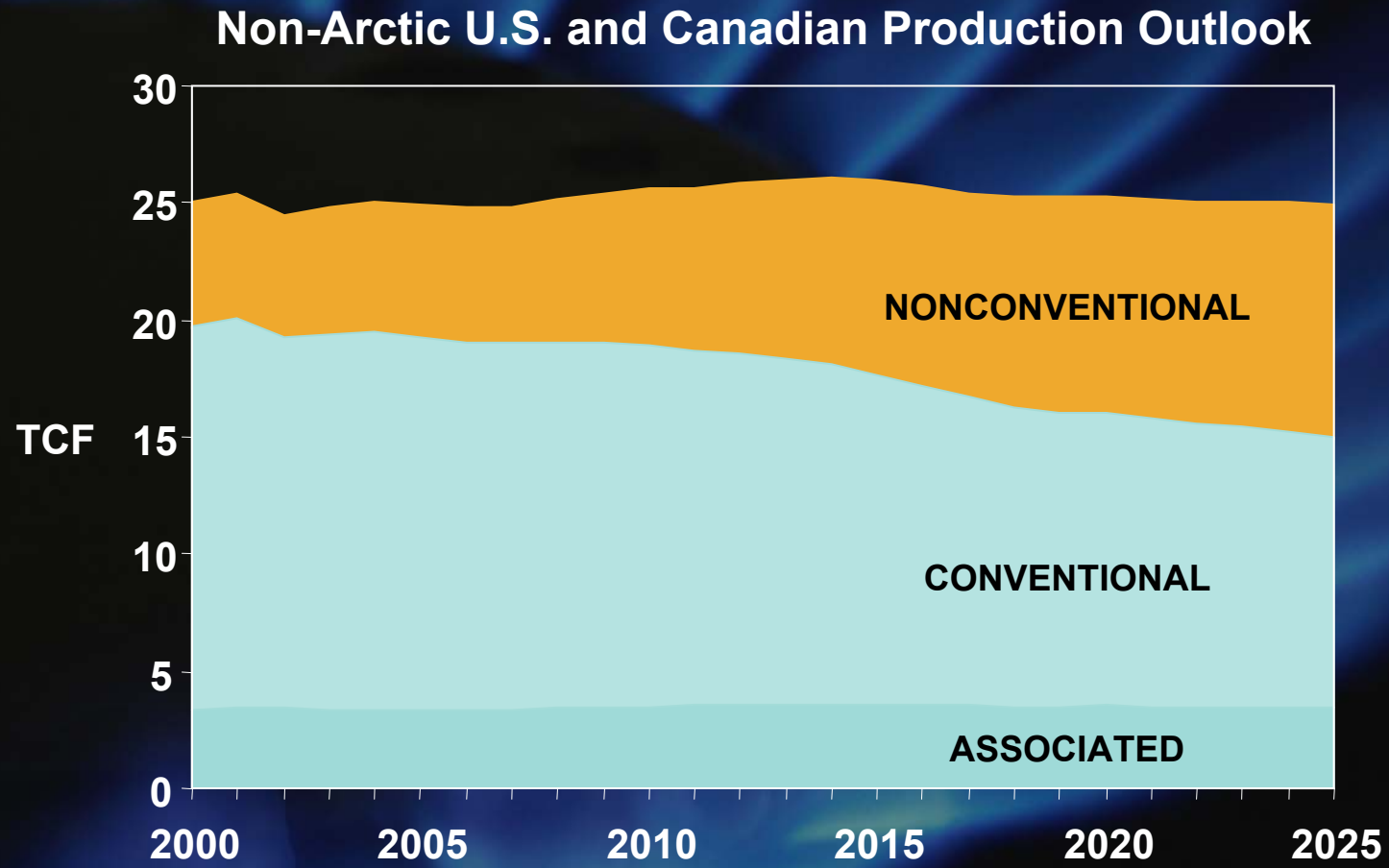




# Rockies and Deepwater Gulf of Mexico Production Must Grow



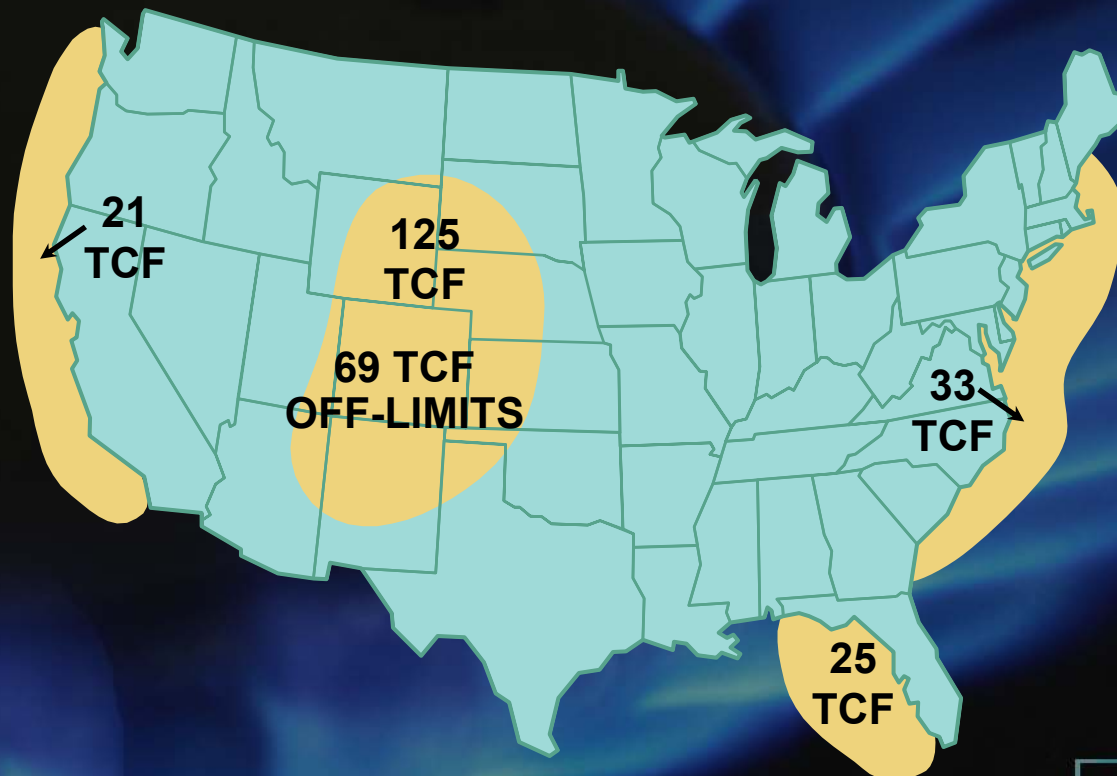
# Nonconventional Production Must Grow



**Finding: Increased access to U.S. resources (excluding designated wilderness areas and national parks) could save consumers \$300 billion in natural gas costs over the next 20 years.**

# Indigenous Resources Are Not Fully Utilized

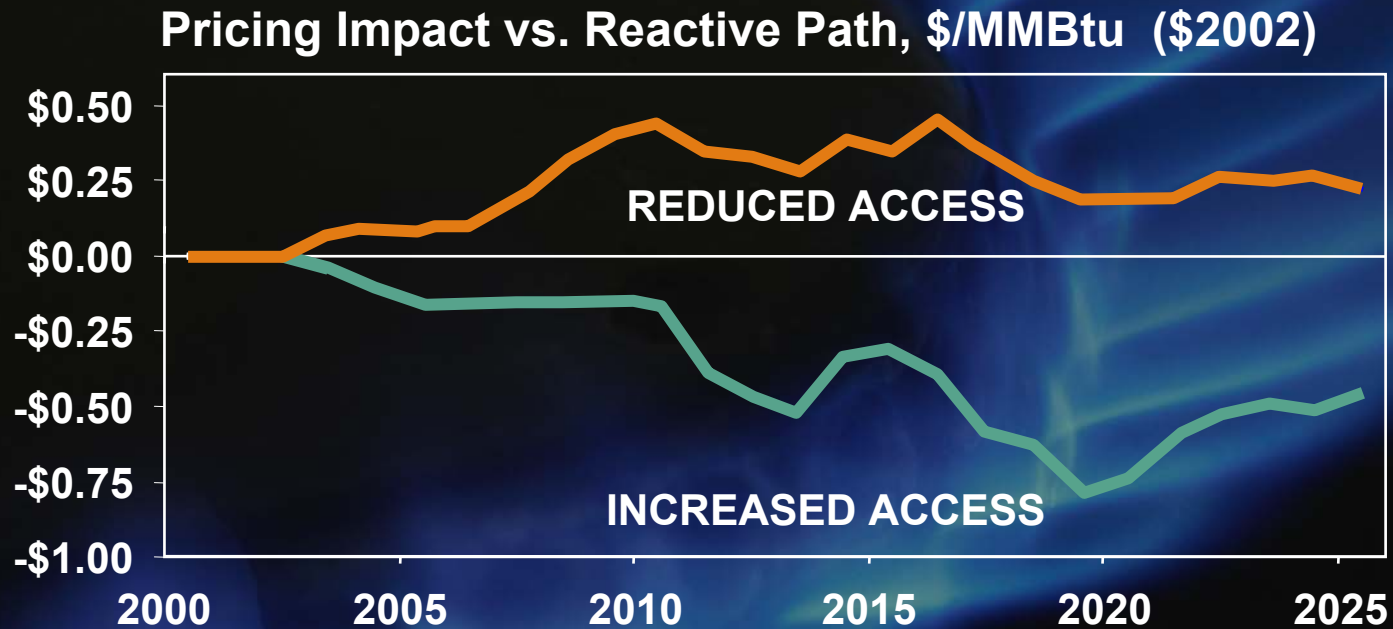
Technical Resource Impacted by Access Restrictions



NPC

# Increased Access Lowers Costs to Consumers

**Recommendation: Increase access and reduce permitting impediments to development of Lower-48 natural gas resources.**

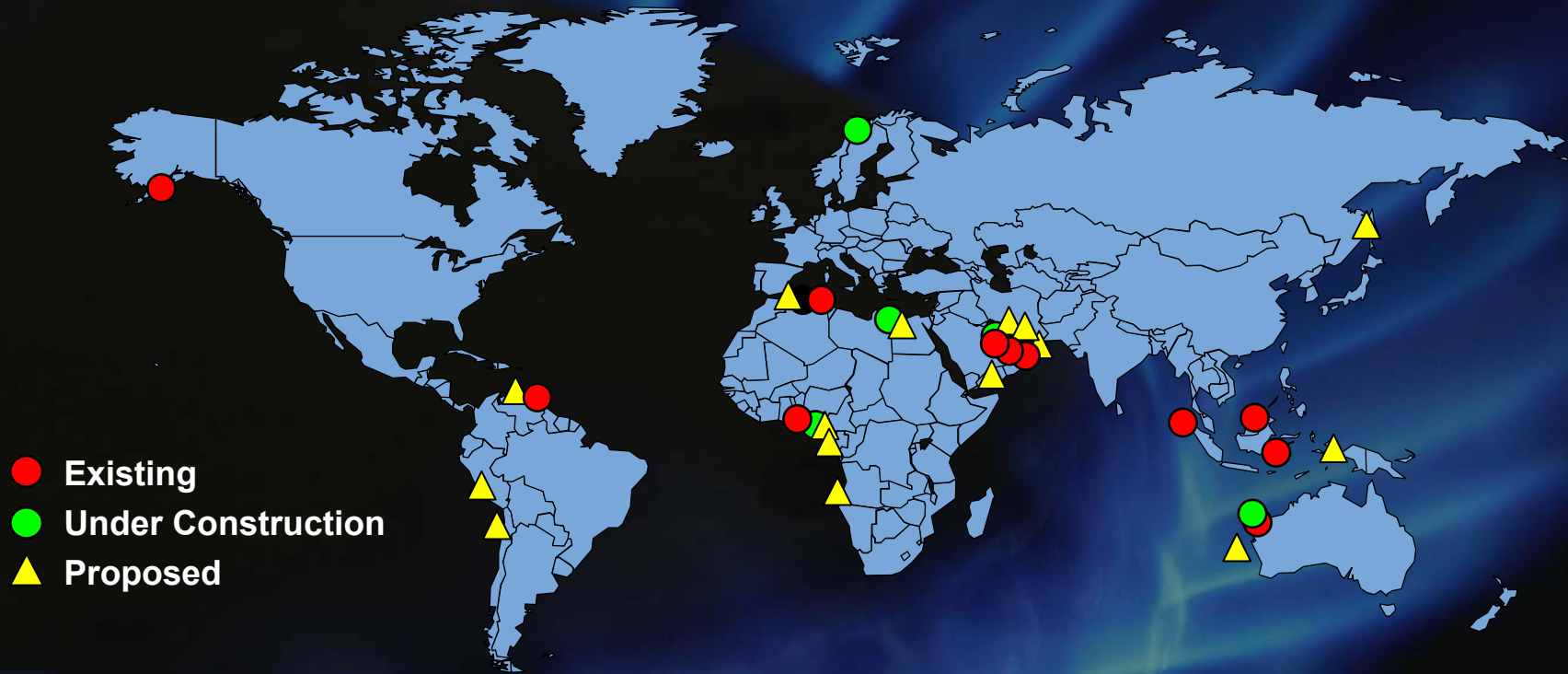




**Finding: New, large-scale resources such as LNG and Arctic gas are available and could meet 20-25% of demand, but are higher-cost, have longer lead times, and face major barriers to development.**

# Worldwide Natural Gas Resources Are Vast

## Global LNG Supply Facilities

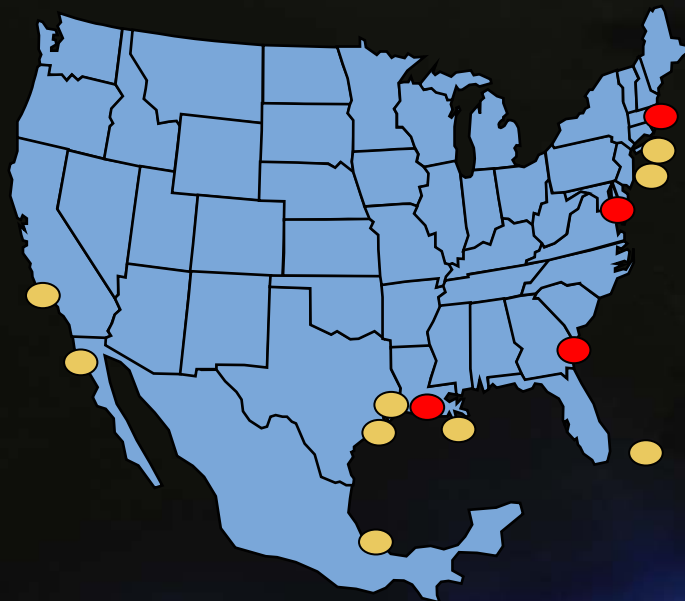


Annual Global Consumption  
< 2% of World Proved Reserves

NPC

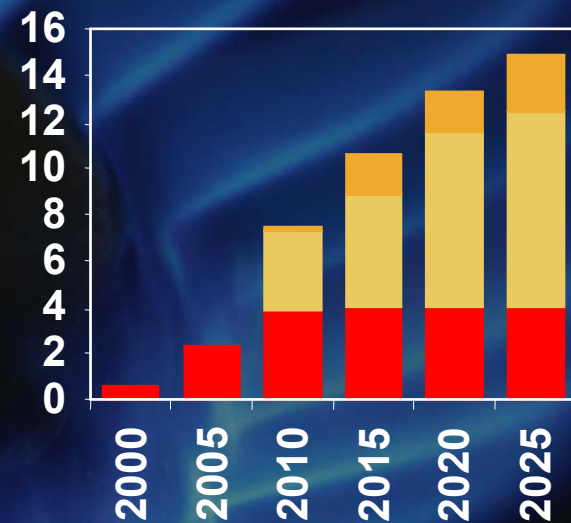
# LNG Imports Are Needed, But Face Obstacles

Import Terminals



- Existing
- Potential

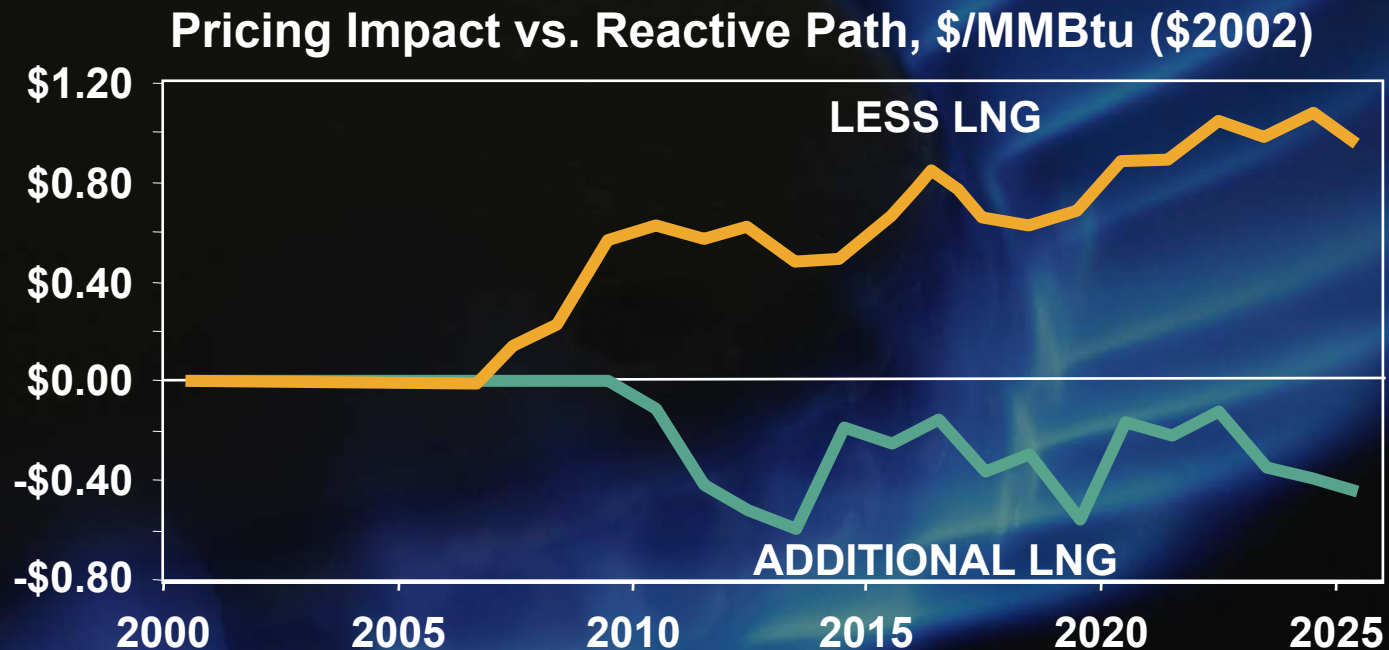
Projected Imports  
BCFD



- New - Balanced Future
- New - Reactive Path
- Existing & Expansions

# LNG Imports Can Lower Costs to Consumers

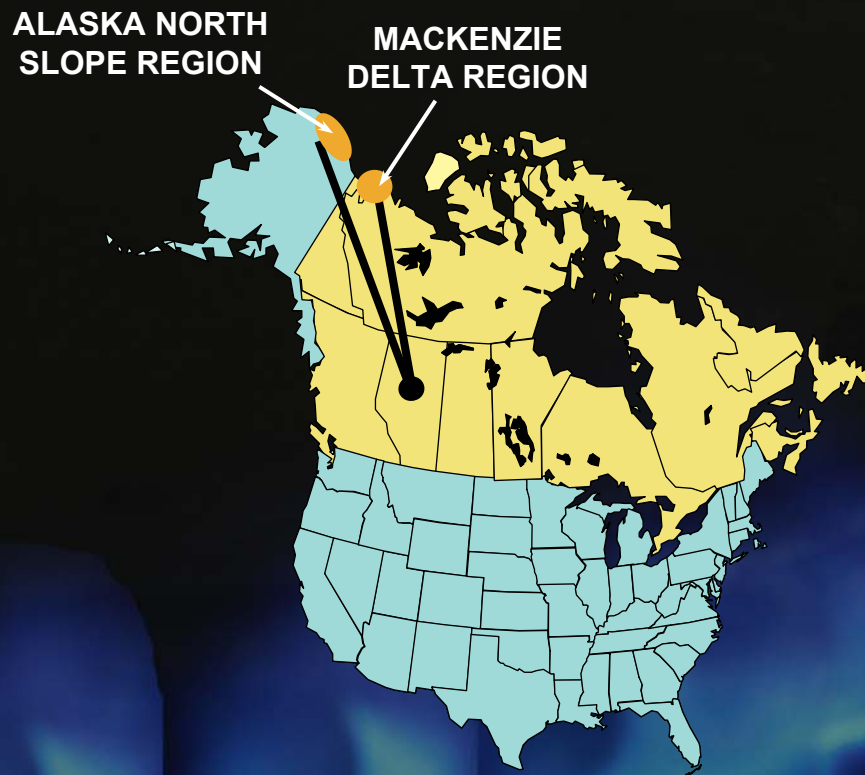
**Recommendation: Process LNG project permit applications within one year.**



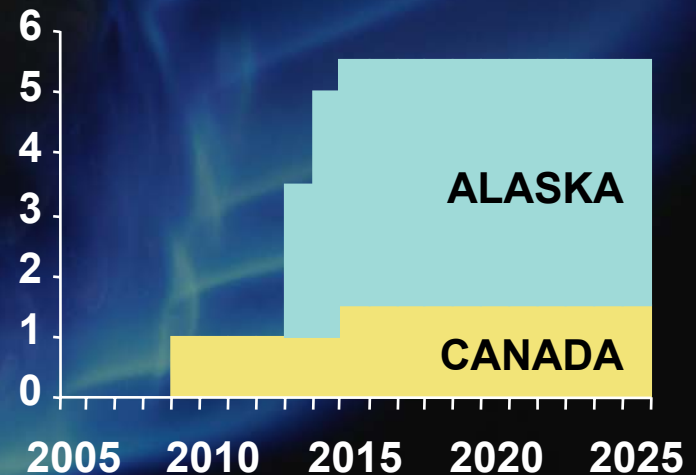


# Arctic Pipeline Projects Can Deliver Important New Supplies

**Recommendation: Enact enabling legislation in 2003 for an Alaska gas pipeline.**



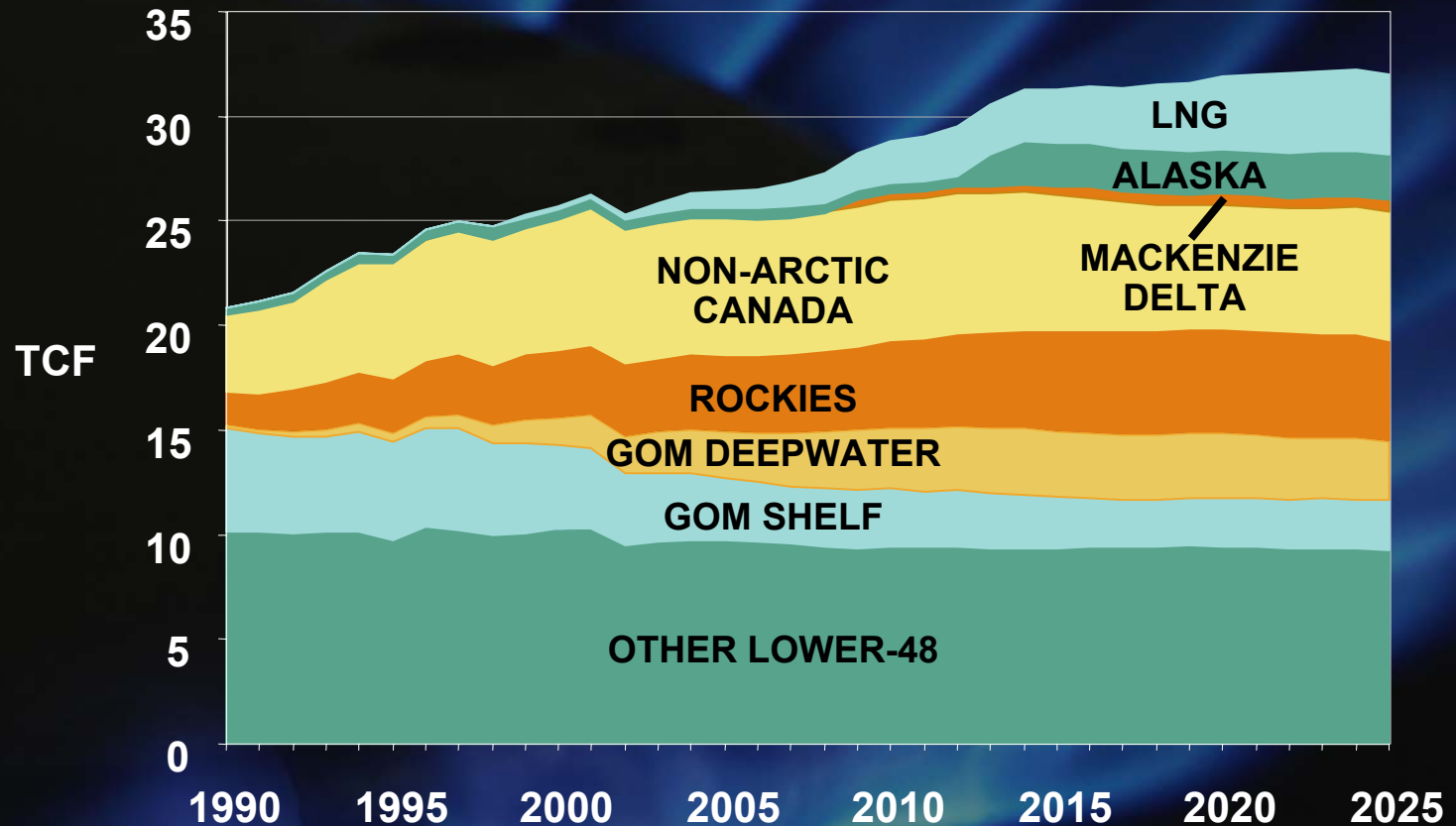
**Projected Production, BCFD**



**NPC**



# Demand is Met from Diverse Sources of Supply





# **NATURAL GAS TRANSMISSION & DISTRIBUTION**

**Scott E. Parker  
Kinder Morgan**

**NPC**

# **The T&D Task Group Conducted a Complete Review of U.S. and Canadian Infrastructure**

**Review existing pipeline corridors**

**Review current storage capacities**

**Determine distribution facility needs**

**Incorporate announced pipeline and storage projects**

**Analyze cost to maintain transmission, storage, and distribution infrastructure**

# North America's Infrastructure is Extensive



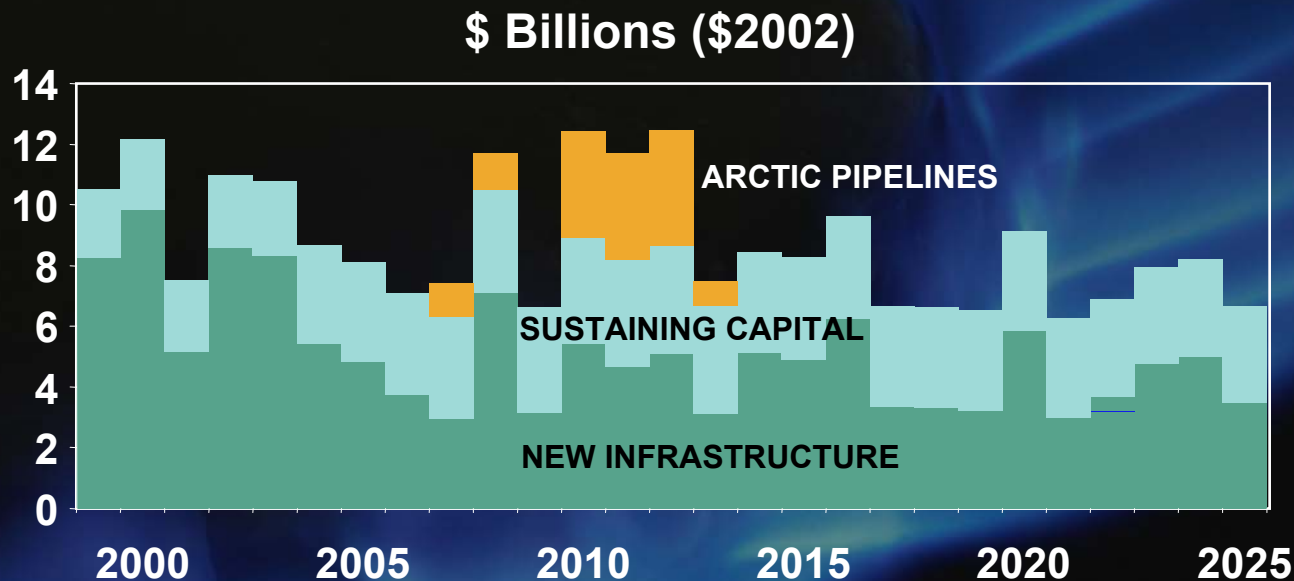
NPC

**Finding: Pipeline and distribution investments will average \$8 billion/year, with an increasing share required to sustain the reliability of existing infrastructure.**

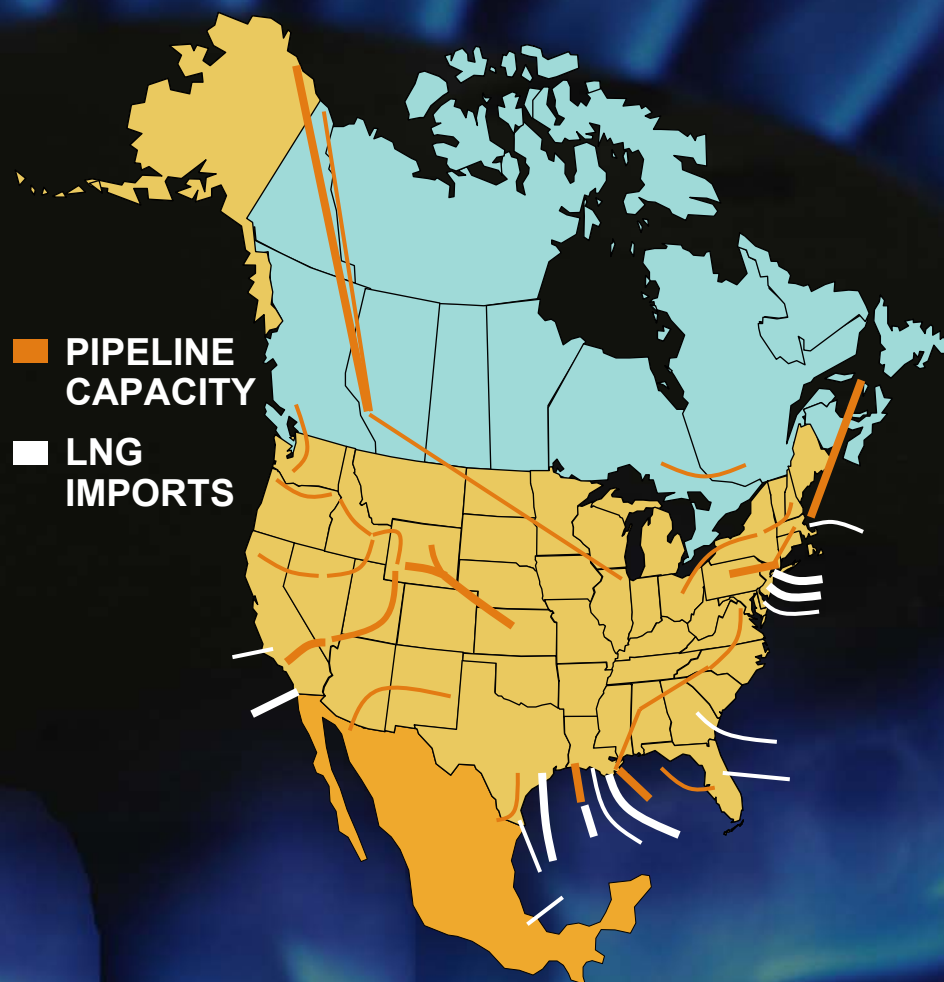


# Sustaining Capital Will Be an Increasing Share of Total Infrastructure Investments

**Recommendation:** Federal and State regulators should provide regulatory certainty by maintaining a consistent cost recovery and contracting environment wherein the roles and rules are clearly identified and not changing.



# New Pipe Capacity is Driven by Areas of Supply Growth

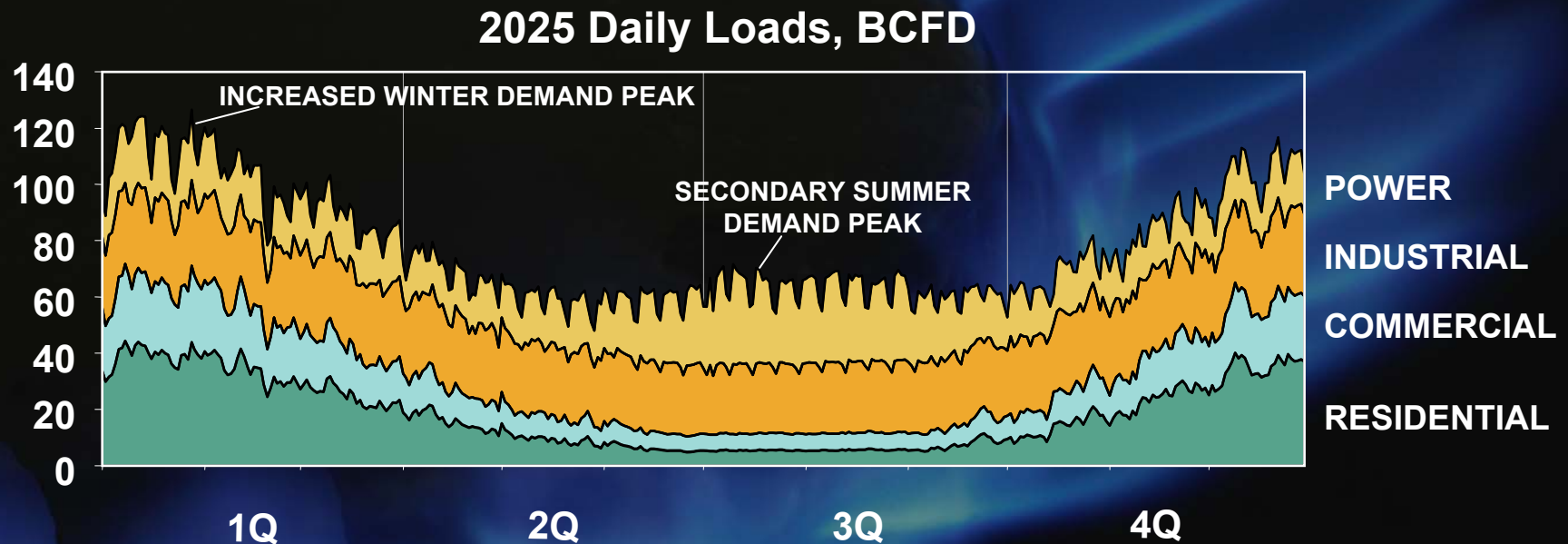


**Recommendation:**  
Complete permit reviews  
of major infrastructure  
projects within a one-  
year period utilizing a  
“Joint Agency Review  
Process.”

NPC

# Peak Demands Are Becoming More Pronounced

**Recommendation: FERC should allow operators to configure transportation and storage infrastructure and related tariff services to meet changing market demand profiles.**



# **Research Plays a Significant Role in Distribution Cost Control**

**Recommendation: Regulators should encourage collaborative research into more efficient and less expensive infrastructure options.**

**Enhanced safety**

**Improved replacement techniques  
with less disturbance**

**Enhanced locating technologies**

**Advanced environmental  
remediation**





**Finding: Regulatory barriers to long-term contracts for transportation and storage impair infrastructure investment.**

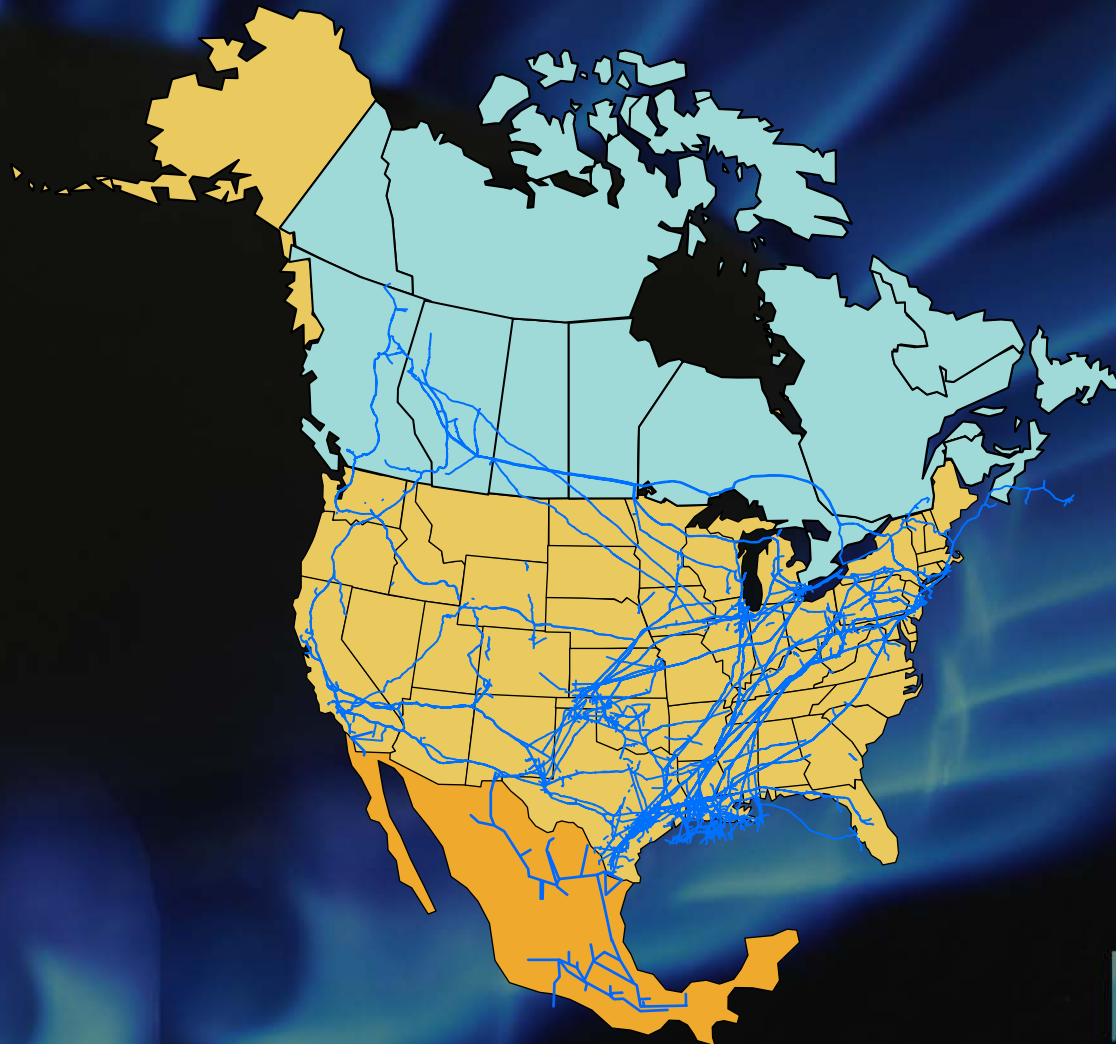


# Barriers to Long-Term Contracts Inhibit Infrastructure Development

**Recommendation:** Regulatory policies should address the barriers to long-term, firm contracts for entities providing service to human needs customers.



# North America's Extensive Infrastructure Must Be Maintained



NPC



# **CLOSING**

**Jerry J. Langdon  
Reliant Resources, Inc.**

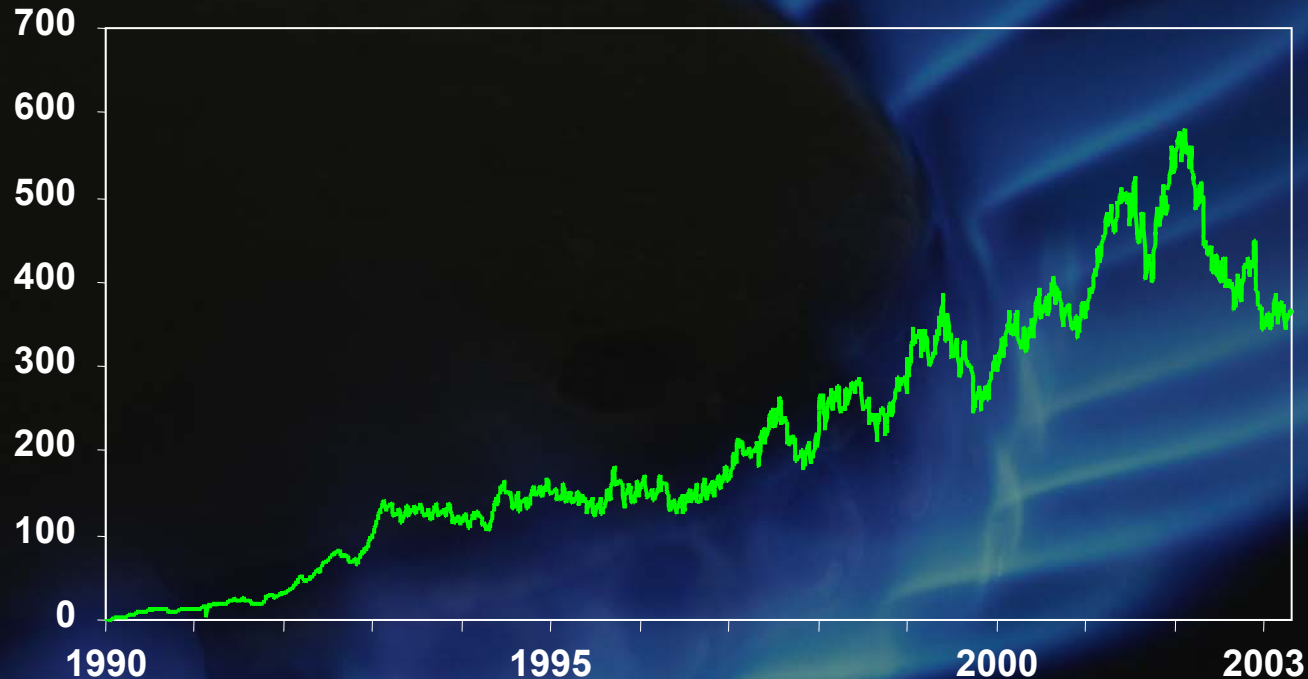
**NPC**

**Finding: Price volatility is a fundamental aspect of a free market, reflecting the variable nature of demand and supply; physical and risk management tools allow many market participants to moderate the effects of volatility.**

# The Natural Gas Market Works

**Recommendation: Promote Efficient Markets by Improving Price Transparency, Market Data Reporting, Liquidity.**

**Nymex Open Interest - Natural Gas Contracts**





**Finding: A balanced future that includes increased energy efficiency, immediate development of new resources, and flexibility in fuel choice could save \$1 trillion in U.S. natural gas costs over the next 20 years. Public policy must support these objectives.**

# Action is Required in All These Areas

Improve demand  
flexibility & efficiency

*and*

Increase supply  
diversity

*and*

Sustain and enhance  
infrastructure

*and*

Promote efficient  
markets



Higher economic  
growth

Higher employment

Stronger industrial  
activity

# **BALANCING NATURAL GAS POLICY**

**Fueling the Demands of a Growing Economy**

**Committee on Natural Gas Presentation  
to the National Petroleum Council**

**September 25, 2003**

**NPC**

# **NATIONAL PETROLEUM COUNCIL**

**112<sup>th</sup> Meeting  
JW Marriott Hotel**

**PRESS CONFERENCE**

**Washington, D.C.**

**September 25, 2003**

**2:30 P.M.**

**NPC**